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RAIL-ROAD NEWS.

Walking on the Track.

It is stated that four persons were killed by the cars on Thursday and Thursday night, last week, between Albany and Buffalo. One of the cases occurred between Syracuse and Utica. A man was walking on the track, and seeing a freight train approaching him, stepped off one track upon another. The express train was coming up on that track, and owing to the noise made by the freight train, he did not hear it. The locomotive struck him in the back and killed him. Why will pedestrians walk on the track?

The above we take from an exchange, and we will answer: pedestrians will walk on the track while we have such tracks. All our railroad tracks should be fenced in, and no person allowed to go in or pass out, but through proper gates. We are not finding fault with the management of our railroads in saying this, but with the system.

Fast Locomotives.

We learn by the "London Mechanics' Magazine," that a contract has been made by the Directors of the London and North Western Railway with Mr. Fairbairn, for the construction of a number of "express train" engines, which are to run 113 miles, with loaded trains, in two hours.

James P. Kirwood, engineer, is now engaged in locating the track for the Albany and Susquehannah Railroad. He has gone to the head waters of the Schenevas and Cobleskill. It is expected that the most difficult grade of the road will be in the hands of the contractors during the month of September. Mr. Kirkwood is one of our ablest engineers, and we are pleased to learn of his engagement for the above-mentioned survey.

By our foreign exchanges, we learn that Mr. Granger, a very eminent civil engineer, who had been engaged actively on some of the railroads of Great Britain, especially the Caledonian, has lost his life by a railway collision at a station, caused by the backing out of a freight train against the standing express train. His character for skill and ability was very high.

Hudson, the celebrated Railroad King, who was disgraced a few years ago, in England, for his bad railroad practices, is up and on his feet again. He is in full blast, once more exercising a powerful railroad influence, and is elected Member of Parliament for Sunderland.

The San Francisco Whig states that potatoes are worth ten cents per pound in that market, and that there is a prospect of a short coming crop. Oregon and Bodega will not furnish as many as last year. The barley crop is being harvested; the yield will be enormous. The grape crop is fast ripening, and will soon be in market.

GOLD WASHER AND MAGNETIC SEPARATOR.---Fig. 1.

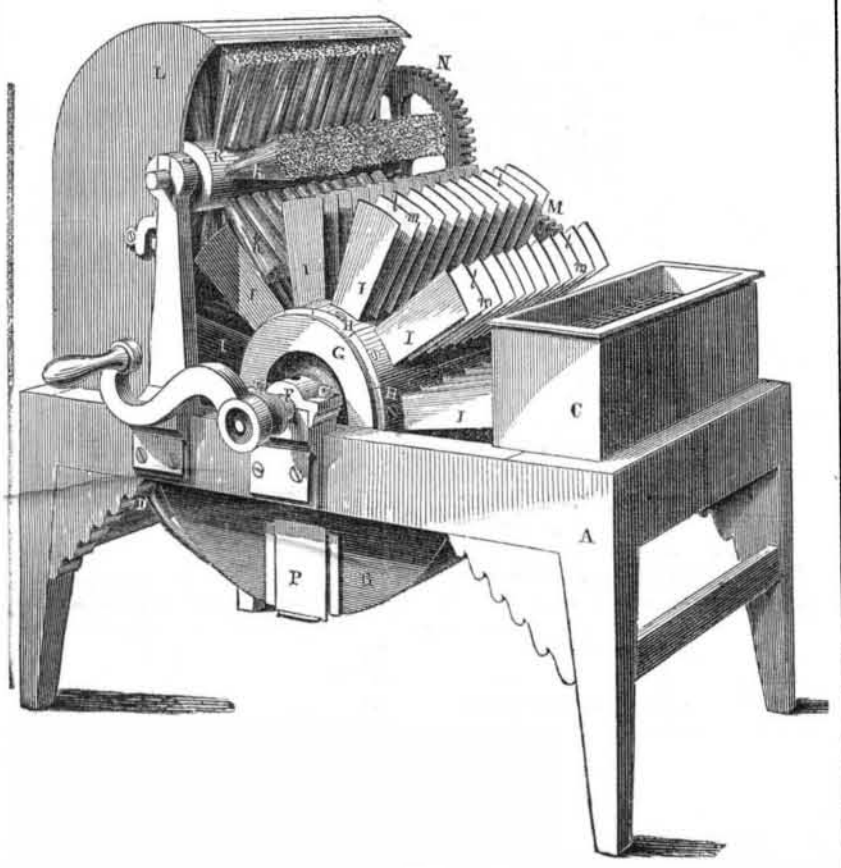
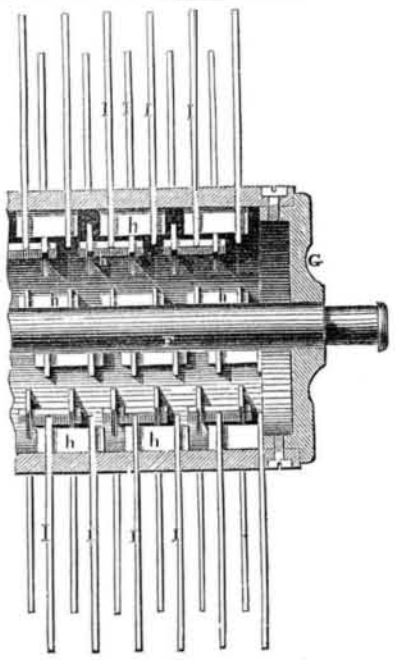


Figure 1 is a perspective view and figure 2, a horizontal section of the magnet cylinder of a machine for gold washing, and separating the iron, &c., from the California ores by magnets. The inventor is Samuel Gardiner, Jr., late of Milwaukie, Wis., but now of this city, who has taken measures to secure a patent.

A is a neat frame; B is a semi-circular trough; F is the shaft of the revolving magnet cylinder; this shaft revolves in bearings on each side of the frame; I I are a series of permanent steel magnets. The magnet cylinder has circular heads, G, one at each side; they

FIG. 2.



are secured to the shaft, F. The surface of the cylinder is formed of section plates, H, one for each row of magnets. Each of these plates can be taken off and put on at pleasure. The magnets are straight strips of steel magnetized, they are made flaring at their greatest circumference, *l m*, where they are thinned or made finer on the edges. The plates, H, have slits in them, and each magnet is thrust into its slits, and every pair keyed together by the key, *h*, inside of the cylinder. Each pair of these strips, I, so connected, forms one magnet in the cylinder; the outside extremities being the negative and positive poles. This is a very simple way of making these magnets, and of connecting them on a revolving cylinder; we believe they are the most simple ever constructed.

The object of this magnetic cylinder is the removal of the black oxide of iron from the yellow dust of California and Australia, which is so difficult of separation from feather gold. The magnets attract and lift up the oxide of iron from the trough, D, as the cylinder revolves, but not the gold, which maintains its position on the bottom; C is a hopper on which the unseparated materials are to be placed; it is composed of two boxes, one above the other, each with a wire screen to keep out stones and lumps from entering the trough; the finer particles of gold, iron sand, &c., pass through the meshes into the trough.

Behind the magnet cylinder there is a revolving set of brushes, *k k*, which are secured in a drum, K. There is a hood, L, behind the revolving brushes; M is a wheel on shaft F, and N is one on the shaft of the brush cylinder. When the magnet cylinder is revolved, the wheel, M, gives motion to N, and revolves the brushes.

Supposing the trough to contain iron sand, &c., along with which is mixed fine particles of gold, when the magnet cylinder is revolved, the iron sand is taken up on the edges of the magnets—attracted to them, the brushes revolving at the same time, brush off the iron sand as they revolve, and it falls down behind, inside of the hood, L, on an inclined apron at the bottom. Each tier of magnets, I I, are cleansed as they come in contact with each tier of brushes, *k*, therefore they are left free to attract new quantities of iron every time they pass through the trough.

At the back of the trough, B, below the inclined shute, D, extending from the upper edge of the trough, there is a slit extending all the way across. There is a sluice for this slit or opening, which is operated by a lever to close the opening entirely, or to have any width of it open as may be desired. There is a round gutter below this opening to receive the water and matter that flows over, and which passes out at the orifice on the the other side of the machine. This machine can be used for the dry separation of the black sands, and it is adapted for a washer and separator also. The water is admitted on the top of the hopper, C, carrying down the finer particles, the revolving magnets agitate the water, and the matters therein, the gold sinks and keeps to the bottom, the silicious lighter matters flow over the back opening into the gutter, while the ferruginous matters are taken up on the magnets as has been described. For crushed quartz rock, this is a good separator and washer, and it therefore answers a double purpose, for it can be used both as an agitator and washer, and a magnetic separator also. The gold is removed at the opening, P. The magnetic cylinder is clasped to its bearings by screw-bolts, it can therefore be lifted off the frame of the trough by removing the bolts. The machine is neat, small, and anything but complicated, and presents some excellent features.

More information may be obtained by letter, or by calling on Mr. Gardiner at No. 69 Gold st., this city.

New Salt Mine in Ireland.

At the last meeting of the Chemico-Agricultural Society for Ulster, Dr. Hodges gave an account of a visit which, with some of the members of the society, he made to the works commenced by the Marquis of Downshire in the neighborhood of Carrickfergus, and also reported some analyses of the salt. The salt, he said, was of great purity; one sample contained so much as 90 per cent. of chloride of sodium (common salt,) and did not afford a trace of magnesia, which is so frequently presented in rock salt. Already the shaft had been sunk 700 feet, and more than 64 feet of pure salt had been discovered. It was yet impossible to say to what extent the bed of salt extended. The discovery of this valuable deposit he regarded as of much interest.

American and English Locks.

It will be remembered that Mr. Hobbs succeeded in picking the famous Bramah lock, and that he received a reward of 200 guineas for his skill. The Messrs. Bramah made some alterations and improvements in the lock, and again placed it in the window in Piccadilly, with the original offer of a reward appended to it. It remained in their window a few days, when a report reached the Messrs. Bramah that Mr. Hobbs intended to try his luck a second time. The lock was immediately removed, and has not since been seen. Hobbs' Patent American lock is being manufactured at Birmingham, Sheffield, Wolverhampton, and in London, in large numbers, and of all sizes, and at prices ranging from six shillings to fifty pounds each. The office of Hobb's American Lock Company is opened in Cheapside for the sale of these American locks. The bank lock, price fifty pounds, has already been placed on the vaults of the Bank of England, the East India Company, and several private banking establishments in the city.

A new plan for building steamers has been brought out in England, and an experimental boat built to run from London to Boulogne. This boat is 235 feet long, 20 feet beam, of 250 tons burden, and has an engine of 50 horse-power. The bow and stern are filled with fixed air, like a life boat. If it meets the expectations of the inventor and builders, two immense vessels of 10,000 tons and 1,000 horse-power will at once be built on the same plan; they will run from London to the East Indies in 30 days, without stopping on the way.—Ex.

[Bah, a vessel of 10,000 tons burden, and 1,000 horse-power, oh what a piece of nonsensical news.

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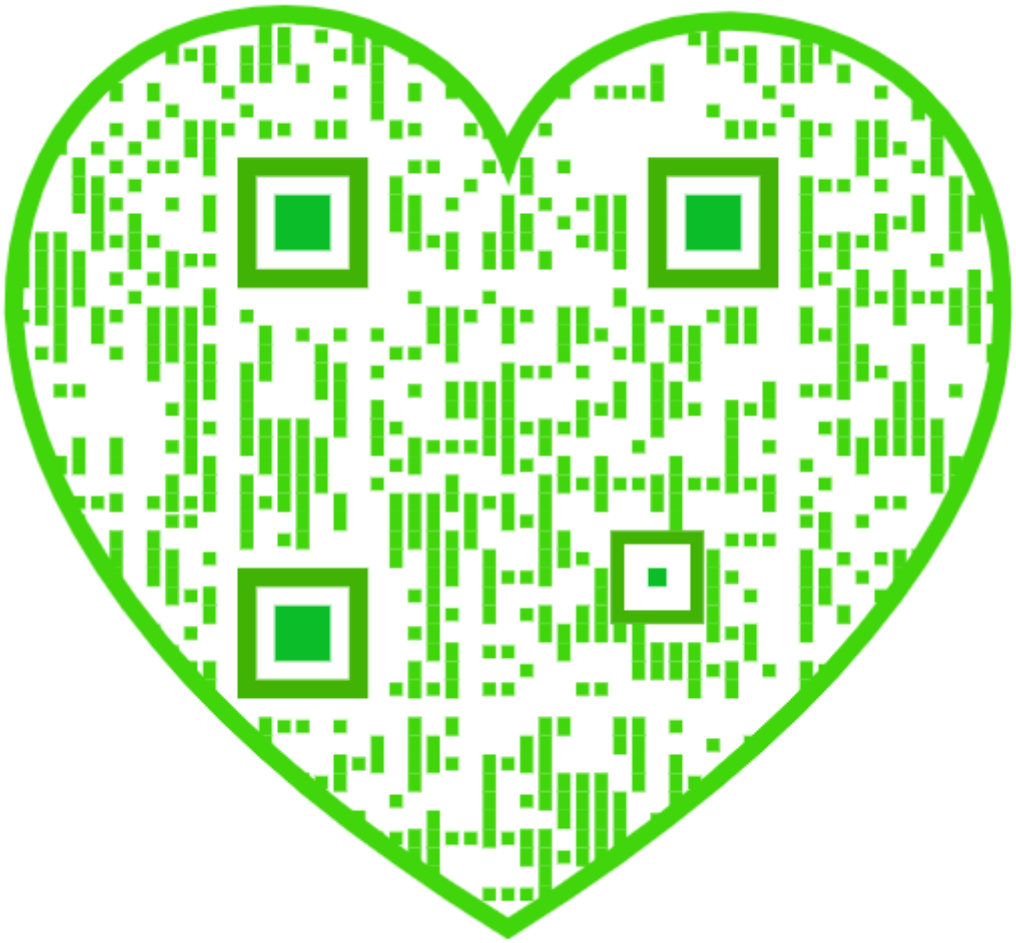

MISCELLANEOUS.

For Farmers---Proceedings of the Royal Agricultural Society of England.

The Royal Agricultural Society held its yearly exhibition at Lewis, Sussex Co., during the past month. It is conducted upon the same principle as our Agricultural State Fairs, and originated like them through the example of the Highland Agricultural Society, whose projector, we believe, was Sir John Sinclair. There is great interest felt in agricultural chemistry at the present moment by all such societies, but none of our societies come up to the mark in wealth to the royal one of England, they may at some day, which we hope is not far distant. This society has offered a prize of £1,000, ($5,000) for the discovery of a manure as fertilizing as guano, and which is capable of being sold for $25 per ton. A lecture was delivered by Prof. Simonds, on the class of diseases to which domestic animals are liable, owing to the presence of parasitical creatures in and on their bodies; his lecture was illustrated by diagrams. In describing the class "hydratids," he said, "the ecchinocacus was not met with in the brain, but in the substance of the liver, lungs, &c., and was the parasite constituting the disease called the measles in sheep. There were few external evidences of its existence, but if the animal were killed, its flesh would be found studded with small white spots, each of which spots, if carefully examined, would be found to contain a peculiar kind of hydatid (hydatid cellulesæ). Thousands and tens of thousands existed in the flesh of pigs, and the disease was very improperly called measles. He believed that Irish pigs were far more prone to it than English. Whether such flesh was fit for food or not, he would leave to those acquainted with the circumstance that every one of these spots (and there were fifty in the space of two or three inches) contained a living creature, capable of propagating its species; and, if it could not live in the human stomach, it could, at all events, resist for some time the action of the pickle in which the meat was preserved. No wonder that with such meat as this in London there should be found diseases. There was a field for inquiry here that must be opened, and for which they were now laying the foundation in examining the diseases of animals."

What a responsibility here rests upon our farmers in giving good food to our citizens. There can be no doubt but many diseases are propagated from animal to man by his partaking of diseased meat. This we say, is very often the case in the the East Indies, where a certain caste of the natives eat the food of deceased animals.

The number of agricultural implements exhibited at Lewis far exceeded the show of the Great Exhibition last year, but among all the different kinds, none attracted so much attention as the reaping machines. They were tried on a field of rye, the result of which was the award of a medal to Messrs. R. Garratt & Son for an improved "Hussey" machine. Here it is but right to state that, owing to an informality in forwarding a copy of the entry to the Society, by Messrs. Dean, Dray, & Co., the original purchasers of the right to make Hussey's machine, their machines were not only excluded from competition, but were not allowed to enter the show-yard. The stewards, however, allowed Messrs. Dean & Dray to exhibit their original "Hussey" which had previously competed with McCormick's machine, and had successfully done work before his Royal Highness Prince Albert, in Windsor Park. On this machine was attached a conspicuous notice to the effect that Messrs. Dean, Dray, & Co., challenged all other machines to compete with it for the sum of £50 and the expenses of the trial.—Mr. Holmes exhibited an improved Hussey, which, by the action of a simple lever, graduated the closeness of the cutters to the ground, by which means the length of the stubble could be easily regulated at the pleasure of the conductor.

In the yard of the exhibition there was a machine which threshed and winnowed, separated the small from the large grains, measured off the work into four-bushel sacks, and on the fourth bushel being placed in the sack, a bell rang to announce the fact to the superintending workman, so that the full sack may be removed and replaced by an empty one. This machine more fully realizes in agricultural mechanics the admirable contrivances seen in the manufacturing districts, where, as in the lace and other delicate textile manipulation, the mute automata of pinions, cranks, levers, and other mechanical contrivances, adaptations and combinations perform the work of sentient beings, and forcibly illustrate the immense mental superiority of man over the animals created by the great Omniscient, who moulded him "in his own image."

As an object of curiosity and utility, it is only fit for the farm of a rich nobleman, but altogether unsuited to American farming; simplicity, strength, and the quality of being easily repaired by farmers themselves, are the requisites of American agricultural machines. To show how the agriculturists of England foster improvements, the following liberal prizes were offered for competition in the horticultural department:—

£50 for stove and green-house plants; £50 for geraniums, fuschias, and other flowers; a splendid silver cup to nurserymen for roses, presented by the Brighton Railway Company; £25 for pines, grapes, and melons; £20 for apricots, nectarines, and other fruits; £16 for cucumbers and other vegetables; £19, 10s., for geraniums; and £7 15s. for heaths.

By multiplying the pounds by 5 we get the value of the prizes in dollars nearly.

The fair is moved from place to place every year, and it is the general practice with the Royal Agricultural Society to offer special premiums for the peculiar stock of the particular district in which is held the current annual Exhibition. This forms one of the great advantages of the itinerant character of their annual shows; as by this means emulation is stimulated amongst the local breeders of cattle, and the good points are developed; on the other hand, local erroneous predilections are occasionally set right by the comparison with stock of other breeds.

The Cochin-China fowl fever is as strong in England as in some parts of New England, in fact it is stronger. One pair exhibited was valued at $700; what a sum for a hen and rooster; the common price of a pair is $100—a fool and his money are soon parted. The striking point to which we wish to direct the attention of our farmers, especially those gentlemen peculiarly connected with our State Agricultural Societies is the splendid prizes in sums of money, which the Royal Agricultural Society offer. Your gold and silver medals, diplomas, &c., are not the things to excite emulation in camparison with $100 prizes.

The stock selected for especial prizes on the present occasion were the Sussex cattle and Romney Marsh sheep. Amongst the former were animals of every shade, from the South Hams Cattle of Devon and the North Devons, with isolated individuals that might be classed with either, and at the same time defy the best judge to select the Sussex from the Devon animal when intermixed. The show of local cattle was numerous and excellent; this practice may afford a useful hint to our Agricultural Societies.

The first prize given for a cow of the Devon breed was $100, and the lowest $50.—One man named "Sandy" took prizes to the amount of $600 for Lancaster sheep.

French Cure for Hydrophobia.

The Paris Board of Health, in view of the prevalence of hydrophobia, among the dogs of that city, has published the following notice:

1. Every person bit by an animal who is mad, or suspected of being mad, should immediately press the wound on all sides, to force out the blood and the virus.

2. The wound should then be immediately washed with volatile alkali, with soap suds with lime water, with salt water, or pure water, or if none of these are at hand, with urine.

3. An iron, at white heat, should next be pressed deeply into the wound.

These directions, if rigidly followed, will will be found sufficient to insure against the possibility of the appearance of this frightful contagious disease.

[It is therefore evident that the authorities of Paris have not much confidence in the steam bath. Any person bitten by a dog, should wash the wound as quickly as possible, squeeze it, and a common fork heated to a white heat, will answer well to burn the wound.

The Flax Culture.

At the last Annual Meeting of the Tippecanoe Co. (Ind.,) Agricultural Society, the principal subject of discussion was the culture of flax. Hon. H. L. Ellsworth, late Commissioner of patents, delivered an address, in which he stated that a committee had been sent from Philadelphia to France, Holland, England, and Prussia, for the purpose of examining the modes of cultivation, best soil, &c., and that the committee had reported favorable as to the adaptation of our soil and climate for raising this important product.

The company who sent this mission abroad possessed a heavy capital, which they have invested in the manufacture of the article.—They offered to make a contract with him for $100,000 worth, and they offered for flax delivered in Philadelphia, equal to Russian, $250 per ton. Mr. E. stated that he had sent by mail for a sample of the quality, and intended to enter into the arrangement, provided a similar kind could be raised upon the prairie lands. He had selected seven or eight different kinds of land, upon which he had sowed different kinds of seed, from one to two bushels to the acre, to test the yield of seed and lint. At the price named, the lint would be worth $40 per acre. There was a machine coming from Springfield for dressing flax. A man and boy with it work out one and a half tons of stems a day. There can be fourteen bushels of seed raised to the acre. This will yield nett $6. He had no doubt but that flax was the best article to cultivate in this country, as a greater value could be got into a smaller compass than any other product our soil and climate could raise. If the oil should be manufactured here, the cake would furnish superior fattening food for cattle. It is now sold to export for that purpose.

Vegetable Gas.

Amongst other enterprizes lately started in England, is a vegetable gas light company. The manufacture of gas from oil is an old idea, but it has always been found too costly. By a new invention its production has now been simplified, and it is free from the defects of coal gas, and can be produced in small quantities at a cheap rate, while at the same time it is more pure and brilliant; there seems to be an expectation that it may come into general use in localities where the existing requirements have not been to such an extent as to call for the introduction of ordinary gas. Already it has been introduced with very satisfactory results at Eton College, at a railway station at Harrow, on the London and Birmingham line, and also in some large private establishments. Among the testimonials in its favor, are several of a very conclusive kind from scientific men, including one from Sir James Herschel, the master of the mint, who states his conviction that the practical solution of the problem of gas-lighting on a small scale has now been attained. The company propose to raise a capital of £100,000 in shares of £10 each, and they will then be ready to supply the apparatus wherever it may be ordered. It is contemplated that it will be used not only in private houses, manufactories, public institutions, and small country villages, but also on board ships, as well as for lighthouses, &c.

[The above we have seen in a number of our exchanges. What is vegetable gas; is it any different from coal gas? No, it merely means gas made from vegetable substances, such as wood, &c., and those who think it can compete with coal, must be very ignorant of the composition of the two.

The New Crystal Palace in England.

The Great Buliding—the Crystal Palace—within whose walls of iron and glass, millions of the world's inhabitants, from every country and clime, congregated in admiring processions, is not to pass away like a brilliant dream. It is to be re-erected permanently, and made more imposing in its proportions than it was when in Hyde Park. The first pillar on its new site was erected at Sydenham, near London, on the 5th inst., it is to arise phœnix-like with renewed and increased splendor, for the company which purchased it have a capital, beside which our New York Company is entirely dwarfed. It is now to be named the "People's Palace," and is intended for gardens, halls of sculpture, art, and science—the amusement and education of the people. The site chosen is an irregular parallelogram of 300 acres; it will have a frontage one way of 1,300 feet, and a frontage in another direction of 3,000 feet. Its site is a commanding position, the summit of a hill where it will be seen from London, towering vast and grand, the wonder of the age. There is to be a transept at each end, and one at the centre, from which there is to arise a vast circular roof 120 feet diameter arising majestically over the roof of the nave. The nave is to be increased 44 feet in height above what it was in London. From rows of columns inside, arched girders eight feet deep, of wrought-iron lattice work will form groups like those in a gothic cathedral. It is to be ready by next May, and will, as before, be the attraction of the world, until some other nation raises a superior and grander work. Unless our New York Company erect a building of a beautiful and unique design, the reputation of our country and city will suffer more than they will gain by it—gentlemen, you must look to beauty and originality, or you will surely lose both profit and praise by the operation.

A New Source for the Supply of Cotton.

The London Daily News speaks of Australia as not only a gold-producing country, but being capable of supplying good cotton. It says:—

"The President of the Manchester Chamber of Commerce must know what cotton is; and from his office, and under his sense of responsibility, he can be in no haste to give his approbation to any doubtful product; he would rather be jealous of the introduction of anything inferior to the best that can be obtained from the old sources. Yet Mr. Bazley pronounces the Australian specimens submitted to him to be "excellent," "really beautiful," and so on; adding, generally, that it is "well got up," and "in perfect condition for the spinner." At the end of the report, we are told that Mr. Bazley has been careful to understate his admiration of the article, and that such specimens of perfect cotton have rarely been seen in Manchester. Here we have at once the product in high perfection, and every advantage in its preparation for use in Lancashire. We depend neither on miserable and degraded slaves, nor on ignorant native Indians, whose minds and ways are not half known to us. We are to be ministered to by English men and English women, who know what Lancashire is, and have the diligent and careful industry and skill which are familiar to us at home. When the gold fever has somewhat subsided, and the shepherds are returning to their flocks and folds, and artisans to the towns, a crowd of the new immigrants will find it best worth their while to devote themselves to the growth and preparation of cotton. While other articles are procured so easily from America, there can be no difficulty in obtaining the best machinery for the cleaning of the product, and many improvements, and economies, and wise arrangements, which are impossible where the laborers are slaves, will be introduced, and must surely give our colony the advantage over all other cotton-fields in the world."

This is only the opinion of the London News, not that of Mr. Bazley. We venture to state that Australia will never be able to compete with the United States in the culture of cotton, either as it respects quantity or quality.

Professor Agassiz offers to the boys in the vacinity of Cambridge, 12½ cents each for each egg of a turtle they will bring him, with care, covered with moist earth, and carried in such a way as to prevent being shaken or rolled about. They are found, two or three inches under the surface in plowed fields, near ponds and marshes. The Professor is engaged in watching the growth of turtles as they are forming within the egg. He will take as many as one hundred eggs at his house, Oxford street, near the College.

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(For the Scientific American.)

Prevention of Explosions in Steam Boilers.

Some years since we endeavored to call the attention of engineers to the following plan to prevent explosions in boilers. Subsequent observation and thought on the subject and a general knowledge of the various modes now in use by gauges, &c., has only confirmed the belief that the following is at least equal to any mode now in use. It is to bore two holes of one inch, or larger, in diameter in the head of any boiler—one in the steam room or chamber, and the other two inches or more above the flues. These holes are to be plugged with an alloy, fusible near the point at which steam is deemed safe, or permitted to be carried in the boiler, say of 150 pounds; the alloy should melt at 350°. These plugs should be made at the United States Mints, of uniform fusibility for any grade of pressure at which steam is used. They should be stamped and sent to the Collectors of Customs, and by them delivered to the inspectors of engines, whose duty it should be to insert them in any boiler on each boat and in such manner that they could not be removed without their being cognizant of it upon examination. The advantage that this plan presents are: That such plugs can never get out of order; an excess of steam will make them work, neither can they be overloaded or in any manner tampered with. They are entirely out of the reach or control of the officers of the boat. If ever an attempt should be made to carry an excess of steam, they, by melting out, would not only give warning to any person on board, but would also furnish incontestible evidence of neglect for which such fines or penalties might be imposed as the law might direct. We again respectfully submit this for consideration. And if, by it, any mode can be matured by which the falsely-named accidents of explosion can be prevented, the object of the writer will be attained—safety in the use of steam. B.

Galena, Ill., Aug. 11, 1852.

(For the Scientific American.)

Water-Proof Paints.

Cheap and useful paint for roofs, walls, fences, outside plastering, &c., may be made by using tar; common tar or coal tar, made thin with spirits of turpentine. Let this be used instead of linseed oil, and to form the body add fine earthy matter such as dried clay or soft burnt bricks ground fine in a plaster mills.

The soft shaly slates of different colors, like the "Ohio Paint." also answer a good purpose when finely pulverized to form the body of paint. For the coarsest kind of work, dry fine sandy loam may be added as a body. Any of these earthy bodies when made sufficiently fine can be used to good purpose in painting either with the tar mixture or oil. Plastered walls on the outside of buildings may thus be rendered water-proof and lasting by using the above cheap paints, and after one or two coats, it will take but a small quantity of oil paint with lead, to make a fine finish with a single coat of any desired color. Whenever a surface thus rendered impervious by this cheap means, is painted over with oil and lead, a single coat upon the surface instead of being absorbed will dry in a thin tough film on the surface, and be more effective than three coats of the same paint put upon an unprepared surface, which, like that of common woodwork, absorbs the oil from the lead.

Lebanon, Pa. S. G.

Parker's Water Wheel.

Messrs. Editors—I wirte you for a little information in regard to Parker's Re-action Water Wheel, to ask if the patent is still in in force? If not, when did it expire? We are using one of the above wheels. Some time in May, 1852 (I do not recollect what date precisely) two men came along, claiming to be the agents for these wheels, to whom we gave our note for $70, due in five months; they immediately sold the note and left the country. As soon as we found there was a trick about it, we advertised it. How shall we proceed in such a case? D. C. Mears.

[If our correspondent had been careful in reading the Scientific American, he would not have given his note for the $70. He should have asked for a reading of the patent, and the documents connected with the case, before he gave such a *note*. We would not pay a single cent. to any patentee, or pretender of a patentee, without examining his claims. Every man is entitled to be heard in his defence before a U. S. Court, and no damages can be obtained, but by a jury trial. The Parker patent has expired. We suppose our correspondent, will lose his money; we do not know how he can help it now; and we are sorry for him.

Recent Foreign Inventions.

Ornamental Paper.—J. Mansell, of London, patentee.—This invention consists in imparting to paper, and to fabrics capable of receiving a gloss by pressure between hard surfaces, patterns or designs which will somewhat resemble the effect obtained by plain damask weaving.

In applying this invention to fabrics prepared with a glossy surface,—as, for instance, glazed calicoes, or papers having a satin finish, any required design is cut out in a thin plate or sheet of metal (after the manner of stencil-plate cutting); and such plate is placed upon the calico or other fabric that is to receive the pattern; and then a damp cloth or blanket is applied to the plate, so as to bring the cloth into contact with so much of the glossy surface as is left uncovered by the plate; by this means, the gloss on such exposed parts is destroyed, and thereby the required pattern is produced on the fabric; the pattern in this case being dull, while the ground is glossy.

Another mode of producing the same effect on fabrics having a glossed surface, is by the use of blocks, similar to those employed by calico printers. To the printing surface of such blocks moisture is applied; and, while in a damp state, they are pressed upon the fabric to be ornamented, after the manner of block printing; by which means the gloss is removed from such parts of the fabric as have been brought into contact with the damp surface of the blocks, and a like effect to that before mentioned is produced.

In the modes above described for obtaining the satin-damask finish, two operations are requisite,—viz., first, the glazing or glossing of the fabric; and, second, the partial removal of the gloss; but the satin-damask finish may be obtained at one operation, by glossing the fabric in parts only instead of over its whole surface, leaving the other parts corresponding to the pattern, or the spaces between the pattern, in their normal condition. In carrying out this mode of operating, a polished steel roller, turned perfectly true, or a polished steel plate of suitable thickness (say three-sixteenths of an inch), is prepared; and upon this polished steel surface, any required design is drawn, in common stopping-out varnish, or, in fact, in any substance that will resist the action of dilute acid. When the surface of the roller or plate is covered with the design to the extent required, the exposed parts of the polished surface are subjected to the corroding action of dilute nitric or other suitable acid; and, by that means, the character of the surface of the exposed part of the roller or plate is changed, by removing the polish therefrom.

As soon as this change has taken place—the time for effecting which will vary according to the strength of the acid used, the temperature of the atmosphere, and other causes—the acid is thrown off, and the roller or plate washed with water; and then the stopping-out varnish is removed,—leaving an ornamented surface still smooth to the hand, but presenting to the eye the marked difference of dead and burnished metal. If it is a roller which has been thus prepared, it is mounted in a suitable framing; and over it a perfectly smooth pressing roller, made, by preference, of some slightly yielding material, is placed. Between these rollers, the paper or other fabric to be ornamented is passed (driving the steel roller by manual or other power); and thereby a glazed pattern is produced on the fabric, corresponding to the bright surface of the metal roller.

In using a plate prepared as above described, it is passed, together with the fabric to be ornamented, between a pair of pressing-rollers; and thereby a counterpart of the pattern contained on the plate is obtained on the fabric.

New Lubricating Compound for Wool.—John Dennison & Son, and David Peel, of Halifax, York.

The patentees commence their specification by observing that in the preparation of wool, rag-wool, and flocks for spinning into yarns, it is necessary and usual to lubricate the same either after they have been washed and scoured, or while in their primitive state sometimes termed "blending" with oil (commonly gallipoli, olive, rape, or whale oil,) in order to lay and smoothen the fibres, and thereby facilitate the subsequent operations of teazing, scribbling, slubbing, and spinning; and that the expenditure for such lubrication adds largely but unequally to the cost of manufacturing woollen yarns, (the coarser and least valuable sorts of wool, rag-wool, and flocks, requiring the largest quantities of oil,) and is, in all cases, more or less burdensome. They then proceed to state that the nature of their invention consists in the manufacture of a new lubricating compound which may be advantageously substituted for the oil as presently used in the preparation of wool, rag-wool, and flocks; not only costing much less, but serving the purpose better, and which new compound may also be applied in most other cases where a cheap, effectual, and innocuous means of lubrication is desirable. The manner of manufacturing the said new compound, is as follows:—The patentees take a quantity of sea-weed, and boil it to a jelly in water. The quantity of water used should be just about sufficient to produce four gallons of jelly from every pound's weight of sea-weed (for the sea-weed kelp, prepared therefrom, or barilla, may be substituted, but they prefer to use the sea-weed itself.) They then draw off the jelly, leaving the refuse matters behind, and add to it, while yet warm, gallipoli, olive, rape, whale, or some other oil of like properties, in the proportion of from one-fourth to three-fourth parts of oil to each part of jelly, mixing the jelly and oil thoroughly by any convenient mechanical means. They thus obtain, at about less than one-half the cost of the oil, a compound which is possessed of much more valuable properties; for not only are the wool, rag-wool, or flocks, when treated with this compound, easer to scribble or spin than when blended with oil, but the yarns, when made into warps, do not require to go through the process of sizing (owing, no doubt, to the glutinous quality imparted to the material by the new compound,) and are ultimately stronger and better, producing, of course, a superior description of cloth. The proportions of the oil and jelly to one another may, as has been stated, vary from one to three-fourth parts of jelly to each part of oil; that is to say, any combination of the materials within these limits, or thereabouts, will be useful for lubricating purposes; and the patentees do not restrict themselves to any specific proportions. But they may observe that, according to their experience, the best proportion (for the woollen manufacturer, at least) is one part of jelly to every part of oil.

[The first patent is from Newton's London Repertory of Arts, and the second from the London Mechanics' Magazine.

Trout in Lake Erie.

Mr. Andrews, of Dunkirk, N. Y., recently succeeded in catching salmon trout in Lake Erie, where it was not known that they existed. Several unsuccessful attempts were made at different depths of water, and in different ways, but at length the true way was found, and that, by turning out some thirteen miles from shore and dropping nets to the depth of nearly or quite 100 feet, and thus letting them remain for some hours, the fish could be secured. Mr. Andrews took at one haul over fifteen hundred pounds of trout and whitefish. In this lot were thirty-three trout, weighing about thirty pounds each.

Extraordinary Discovery---Perpetual Light.

We see it stated in a number of our exchanges that a cave was recently discovered at Laugres, France, by some workmen who were excavating in the debris of some old Roman buildings. It is said that when an opening was effected, one of the workmen instantly exclaimed that there was light at the bottom of the cavern. The parties present entered, when they found a bronzed sepulchral lamp of remarkable workmanship suspended from the roof by chains of the same metal. It was entirely filled with a combustible substance, which did not appear to have diminished, although the probability is the combustion has been going on for ages.

We do not believe any such stuff; it is one of those stories of which the people in the immediate neighborhood will know nothing about, excepting its newspaper importance.

Development of Insect Life.

A great deal of discussion has lately taken place in the scientific world in reference to certain experiments of Mr. Crosse, an amateur philosopher of Somersetshire, England, who was said to have created insects called the Acarus Crossei. It was a mistake, however, to suppose that Mr. Crosse claimed the creation of the insects, for he only alleges that he has been enabled to develop insects under the most singular circumstances. Our consul at Liverpool, Mr. F. F. Ogden, has recently visited the house of the philosopher, and in a letter to the National Intelligencer, gives this account of what he saw:—

"I own to utter incredulity until I had the opportunity of a thorough examination of the process and a full explanation of the means. No room was left for doubt. No delusion, no self-deception, no favorite hypothesis to be carried out, had any influence in the result. On first witnessing the result, Mr. Crosse would not believe his own senses. He locked up his laboratory and took a long walk in the open air to assure himself that he was not laboring under some delusion. On his return he beheld the actual living insect in various stages of its formation. The apparatus was prepared for the purpose of producing crystals from the silicate of potash."

[The diagram we must omit.]

"A tubulated retort, with its long end plunged in a glass dish of mercury, has a platina wire passing through it, connected with a negative pole of a weak galvanic battery. Through a neck in the retort, hermetically sealed, another platina wire immersed in the caustic solution, communicates with a positive pole. The bulb of the retort is two-thirds filled with a most carefully prepared caustic solution of silex and potash. Pure black flints and caustic soda, after being subjected to a white heat, are pulverized and melted into a glass, which is soluble in distilled water. In this solution no animal life can possibly exist, nor can there in the mercury. The whole was then placed upon a shelf for constant inspection. A gelatinous substance was first observed to have formed around the bottom of the positive wire.—Then No. 1, [referring to the diagram,] made its appearance, gradually expanding into Nos. 2 and 3, when flexible filaments were observed. No. 4 began to show animal life, and, after one hundred and forty days' watching through all its changes, the perfect living insect crawled up the wire!—not singly, but in sufficient number to dispel all doubt, if any could have existed, and prepared for another stage of life. Like our mosquitos, that emerge from the element in which they are produced, and are drowned in it if they return, any unfortunate straggler that missed his hold immediately perished. The Acarus Crossei is now known as a distinct species."

[The above we have seen copied in a great number of our exchanges; as it is recorded it appears to us very like a Moon hoax.—Where did the gelatinous substance come from spoken of above? did Mr. Ogden keep an every day observation on the development experiment? If not, how can he speak confidently on the subject? We will believe the story when we see the experiment performed with the same results. There are two questions which arise here—a very curious one is, the Crossei insects taking so naturally to climb the wire like sailors, and where they could go to when the retort was hermetically sealed. The writer of the above should have taken a long walk in the open air like Mr. Crosse, before he advanced such views, in order to get rid of some delusion under which he was laboring.

The Montreal Gazette notices a beautiful mass of pure solid gold recently received from the Chaudiere Region, and now in the possession of Mr. Logan, Provincial Geologist, very much in the shape of a kidney potato, and measuring 2 inches in length, by 1·05 inches in breadth, and ·95 in thickness; weighing 126 dr., 16 gr., and valued at near £28.

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NEW INVENTIONS.

Improvement in Gas Burners.

Thomas Shepherd, of Philadelphia, has taken measures to secure a patent for a good improvement in gas burners. The burner is formed in two parts,—made separate,—a socket and cap, the latter of which has a conical shaped cavity in the centre of its upper surface, which is filled with silver, and made smooth and even; a cavity is then drilled in the silver, and two vent holes are drilled through the cap, passing through the sides of the cavity at opposite points. The burners which are in common use, are all formed of one piece—cap and socket, and the great difficulty experienced in forming them, is the drilling of the vent holes; they must have a perfect line with the bore of the main passage, or a slight imperfection will render the burner useless. The cap being made separate from the socket, in the new burner, either piece that is perfect (socket or cap) can be retained, if the other is not drilled correctly. The lining of the cavity with silver prevents corrosions and obstructions of the passage, as in the case of complete brass burners. A new cap can also be fitted to an old socket, if anything should render the cap inoperative.

Improved Knives for Cutting Hay.

William Hovey, of Worcester, Mass., a well known inventor, has taken measures to secure a patent for a useful improvement in the knife cylinder for cutting hay, straw, and other substances. The cylinder for carrying the knives is of cast metal, and composed of spiral wings, with the backs brought as closely as possible together, so as to unite and form a solid axis of a smaller diameter than that necessary for the journals; their ends are protected and connected together, and to the journals with heads. The diameter of the cylinder being reduced to the smallest possible degree, the leverage is thereby increased, and it takes less power to operate the knives. One-third of the number of knives may be saved, and the feed is cut equally as short; the spaces between the knives are left more open, and are therefore less liable to clog. By reducing the number of knives, their twist is increased, and a finer contact between the cutting cylinder and the roller against which it cuts the straw, &c., is the result; the improvement on this class of machines is a good one.

Rotary Engine.

Cassius A. Mills, of Cold Water, Michigan, has invented an improvement on rotary engines, for which he has taken measures to secure a patent; it has a double steam chamber, and is intended to work true in the packing and pistons, so as to obviate the common objections of unequal friction, and consequently uneven wear of the parts.

Improved Truck for Cars.

M. H. Coover, of West Philadelphia, Pa., has taken measures to secure a patent for an improvement in railroad trucks, which consists in the use of a bolster placed transversely on the truck frame, said bolster having springs (one at each end) of india rubber. The car is attached to the bolster, and the springs counteract the lateral motion of the car, and render the movement of it much easier than those in use at present.

Jacquard Cutting Machine.

James Miller, of Worcester, Mass., has invented a machine for punching the cards used in the jacquard for weaving. The plan of punching cards, at present in use, is by hand, this machine punches out a whole card at once. It contains also the pattern, for the cutter to read his punches each thread of which is successively presented to the eye with the greatest facility. It can easily be operated by a boy.

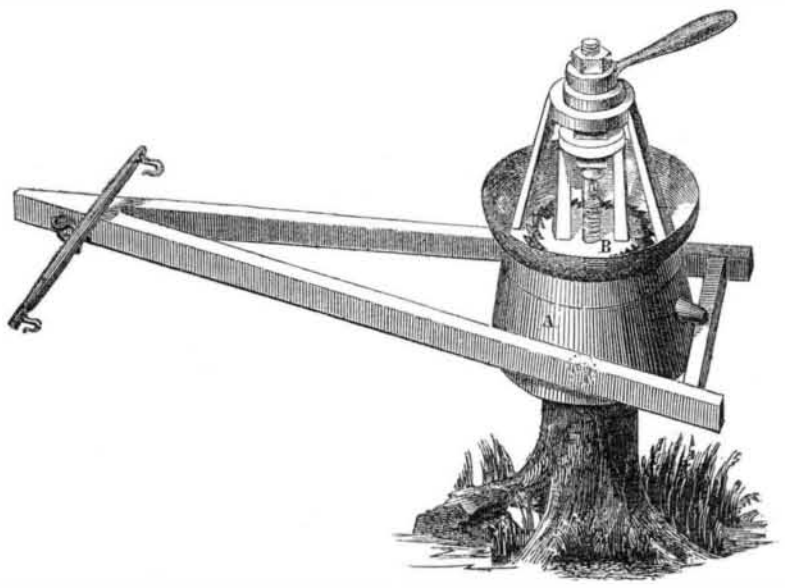
Dentist Instruments.

Melvin Jinks, of Wayland, N. Y., has invented a useful improvement on Turnkeys for extracting teeth, the nature of which improvement consists in substituting for the fixed fulcrum, a rolling one, which lies against the gum and rolls on the key as it is twisted. The key is furnished with an additional claw for the purpose of catching the tooth on the same side as the fulcrum, and opposite to the ordinary hook claw. The object of these improvements is to enable the key to draw the tooth directly from the jaw, instead of racking it over at the side, by which practice, in tough cases, the jaw bone is sometimes broken. Measures have been taken to secure a patent.

An Improvement in Attaching Hubs to Axles.

W. N. Chamberlain, of Ithaca, N. Y., has taken measures to secure a patent for an improved mode of attaching hubs to axles, the nature of which improvement consists in making the skein of sheet steel or iron, and of tubular form, so as entirely to cover the arm of the axle; the said skein has a thimble on its front end with an aperture through its centre through which a bolt passes, the head of it being within the skein. A nut is secured on the outer end of the bolt, and against the front plate of the hub, the bolt revolving with the hub.

LEAVITT'S IMPROVED PORTABLE MILL.



The annexed engraving represents a valuable improvement in Portable Mills, adapted to the various grinding and crushing purposes of a farm, which are now required and found so profitable in the improved modes of feeding stock. It is the invention of Mr. Charles Leavitt, of Quincy, Illinois, who obtained a patent for it, on the 6th of last month (July, 1852.)

This mill differs from those of ordinary construction in having the relative position of the grinding surfaces reversed, that is, the external hollow cone or concave grinder, A, is made to revolve on the inner or convex cone, B, which is stationary, and so formed with an internal cavity, that it may be readily and securely fixed on a post, or any tree stump which may stand convenient, and thus all exterior framing, as well as shafts or spindles, are entirely dispensed with; and the lever to which the horse is connected, for giving motion to the mill, is attached directly to the exterior cone, and moves it round about, as exhibited in the engraving.

The adjusting screw apparatus, C, is also simple and effectual, and is worked from above without interfering with the operation of the mill. By it the mill is made capable of application to a vast range of purposes, as well as being made to grind coarse or fine, as desired.

Among the uses to which this mill is adapted, are the following, viz., shelling corn, grinding or crushing corn and cob together, grinding meal from corn and other grains, crushing roots, grinding bark mashing apples for cider, and other like purposes.

This form of mill is so simple in its construction, and its parts are so few, that it can be furnished at a very low price, when the value of the services it performs is considered; and for the same reasons it is very durable and unlikely to get out of repair.

For further information, or applications respecting rights, address the patentee as above.

INGHAM'S HORIZONTAL WATER-WHEEL.

Figure 1.

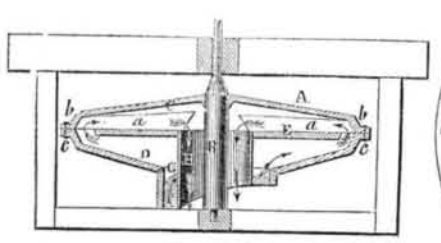
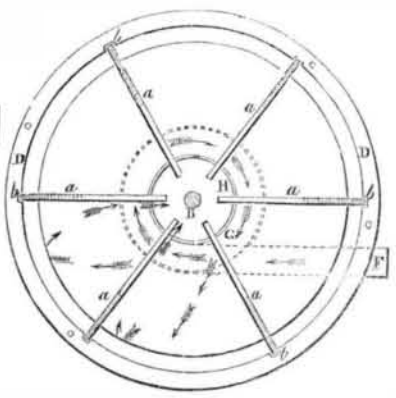


Figure 2.



The annexed engravings are views of a new horizontal water-wheel, invented by John Ingham, of the city of New York, and for which he has applied for a patent.

Figure 1 is a vertical section, and figure 2 is a top or plan view of the interior. The same letters refer to like parts.

The wheel is set and secured in a frame in any of the known ways, so as to be supported and run freely in journal boxes. A is the wheel; it is of peculiar construction: the outside, by a plan view, fig. 2, resembles a hollow disc; by the section, fig. 1, its vertical section is of the form of a double cone. There is no opening outside of the case,—it is perfectly close at top, sides, and periphery. It is composed of two covers, *b c*, united together by screw bolts, enclosing the buckets and water chambers inside. The wheel is secured to the shaft, B, at the top. H is a pipe enclosing the shaft, B, and is stationary; this is the discharge pipe; E is a circular plate secured to the case to move along with it; it is of less diameter than the case, to allow of a suitable space at the outer edge for the water to pass up and over, and through the buckets. *a a* are the buckets or water spaces; they are vertical partitions secured on the plate, E. The water is admitted to the wheel through the trunk, F, fig. 2, and passes into the wheel at the centre by a spiral shute, G, as shown by the arrows, to give the water a whirling motion, then it passes through the chamber, D, over the edge of the plate, E, to chamber, C, and through the buckets, *a a*, and is then discharged down through the stationary pipe, H, which encompasses the shaft, B. The case, plate, E, and buckets, with the shaft, revolve; the other parts are stationary.

This wheel is very simple in construction; the water, acting on plate E, obviates downward pressure on the shaft, thus preventing undue friction.

More information may be obtained by letter addressed to Mr. Ingham, No. 304 West street, New York.

Stone Cutter.

M. Decoster, a French stone cutter and an ingenious man, has had constructed, for use in his stone yard, an engine with a square cylinder. This is furnished with four drawers, two for receiving and two for exhausting steam. This construction of this steam engine does not appear to cause more trouble than ordinary engines. This engine carries a number of polishing machines and works them with great exactitude. M. Decroster says that by this experiment he has learned how to construct a simple engine which will occupy but a small place and perform a large amount of labor.

To Reach Ships in Distress.

M. Dorey & M. D'Houdelot, of Havre, have imagined a system of using an india rubber cover, to serve for an envelope to projectiles sent to a shipwrecked vessel, in case of its being stranded too far from the shore to be reached by boats. Their plan is this: a strong cord is fastened to a covering of india rubber, which is placed over the muzzle of the cannon, when the cannon is fired off the india rubber cover is caught by the ball and carried by it over, or into the ship—the string accompanying it being sufficient to enable the sailors to pull a rope to them.

The above two extracts are translated from the "Genie Industrielle."

Wigs and Toupees made by Machinery.

Charles Bourgard, of this city, has invented a new machine for making wigs and toupees, which will do away with all hand labor in making the same. It contains one or more needles, and has a frame and carriage; the needles receive such motions in relation to each other as are necessary for the performance of the operation. There is a work-frame placed upon a slide-frame, which rests upon a carriage, and is adjustable longitudinally and transversely. The silk or other material of cloth in which the hair is to be inserted, is placed in the work-frame, and any quantity of hair is laid upon the face of the cloth. The needle is barbed and receives a reciprocating motion in a line perpendicular to the cloth, and passes through it from its back side, catching one or more hairs as may be required, drawing the ends through the silk to the other side. The carriage on which the toupee cloth is placed, is moved by an intermittent rectilinear motion, so as to bring the cloth forward to its proper position for every passage of the needle. The hairs are inserted in rows, and the distances between the rows and the separate hairs are regulated by the double slide frame; the machine is ingenious, and it does its work in a very superior manner. Measures have been taken to secure a patent.

New Paddle Wheel.

Ebenezer Barrows, Jr., of this city, has taken measures to secure a patent for an improvement in paddle wheels, to make the blades dip vertical, act horizontal in the water, and lift vertically out of it. The axes of the blades are secured to a ring which is hung eccentric to the rim of the wheel which form the bearings for the axes of the blades.

State Fairs for 1852.

The following is a list of the Agricultural Fairs to be held, during the coming Fall, in various sections of the Union:

Vermont and Rutland, . .	Sept.	1, 2, 3
New York, at Utica, . . .	"	7, 8, 9, 10
Ohio, at Cleveland, . . .	"	15, 16, 17
Michigan, at Detroit, . .	"	22, 23, 24
Canada West, at Toronto .	"	21 to 24
Indiana, at Indianapolis .	Oct.	19, 20, 21
Pennsylvania, at Lancaster.	"	20, 21, 22
Wisconsin at Milwaukie	"	6, 7, 8
New Hampshire	"	6, 7, 8
Georgia, ...	"	18 to 23
Maryland, at Baltimore . .	"	26, 27, 28, 29
Am. Pomological Congress, at Phila.	Sept.	13
American Institute, at New York,	October	5
American Ins. Exhibition of Stock,	Oct.	19, 20, 21.

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Scientific American

NEW-YORK, AUGUST 28, 1852.

A Few Words to Our Readers.

In two weeks from this date our Seventh Volume will be completed. It is customary for us, at such a time as this, to say something to our subscribers respecting the past of our career, and our intentions for the future.

Since the Scientific American was established, seven years ago, our country has made great progress in Science and Art, and our scientific and mechanical literature is more elevated and profound. Hundreds of our subscribers have repeatedly expressed their acknowledgments for our humble labors in conducing to this happy result. Many useful discoveries, and much practical information has been presented, for the first time, to the world, through our columns. We have always made it our aim and object to secure information of a standard and trustworthy character, but we never have, and never will confine ourselves to any one branch of science or art. It is true, that new inventions in machinery necessarily receive,—and always will,—our most particular attention and the most prominent place in our columns, but at the same time, we cull information from every source, which we deem of benefit and interest to our readers. The Scientific American maintains the position of being "The Repertory of American Inventions and Cyclopedia of Useful Information." It embraces within its scope Mechanics, Chemistry, Agriculture, Medicine, Electricity—all Science and Art—so as to render it useful to every family, and every individual, old and young, in our land. Accounts of new and useful inventions and discoveries are always presented first through our columns, nothing important comes second-hand; those, therefore, who desire to be possessed of the earliest information respecting inventions must consult our pages.

Ws have been continually extending our relations abroad, and we now have the means of obtaining more reliable information about foreign inventions than any other periodical whatever. Our principal aim and object, however, is the dissemination of information about American inventions; the claims of all new patents issued at Washington, are *first* given to *our* readers, and the inventor who is not one of *our* subscribers, stands in his own light, and obstructs his own pathway. Our illustrations are the finest specimens of mechanical wood engraving ever presented to the American public; they are, of themselves, worth the whole year's subscription. We expect a great addition to our subscription list for next volume; and although at the present moment—we speak without any reservation—the Scientific American, considering its illustrations and the matter contained in its columns, is the cheapest Mechanical Paper in the world, and is as much worth four dollars per year as others are worth the one half, or as our first volume was worth two, yet it is our intention to render the next volume far better than any of the past seven. We shall employ competent artists during the Great Exhibition in this city next year, and every important machine exhibited will be illustrated and described in our columns. We hope our readers are getting up large clubs; the prizes we present are certainly no small inducement, and we assure every subscriber, that he will never regret having subscribed for our next volume,—he will get full value for his money.

In places where only one or two of our papers are taken, we should like if our friends would endeavor to get up clubs, for packages are more regularly carried and transmitted on post-office routes than single papers. We hope our friends will send in their subscriptions at an early date, that we may be enabled to judge somewhat correctly as to the number of papers it will be necessary to print to supply the demand. None of our first five volumes can now be procured,—the whole edition of each being exhausted. The Scientific American is considered the standard chronicler of American inventions, and Volume Eight, by the law of progress, will be the brightest and best of them all.

Experiments with Centrifugal Pumps.

At the Great Exhibition, last year, three centrifugal pumps were experimented with by the Jury—one of them was Gwynne's, a name rendered somewhat prominent as being an American pump. The other two were "Appold's," and "Bessemer's." The one which gave the most satisfactory results, and which beat the other two, by a long distance, was Appold's. In one minute, with 828 revolutions, it raised 2,100 galls. 8½ feet high, producing an effect of 0·588 to the power expended. By 620 revolutions per minute, it raised 1,664 gallons 9 feet high, with an effect of 0,648 to the power applied. Here, in these two experiments, we have an evidence that the useful effect, according to the power applied decreases, as the velocity is increased, for the useful effect is only 0·588 in 828 revolutions per minute, while it is 0.648, in 620 revolutions per minute—a difference of 0·060 in favor of the slower motion. How does this accord with the increase of force, costing nothing, according to the square of the velocity?

Gwynne's pump raised 280 gallons 13·8 feet high with 920 revolutions per minute; giving a result of 0·19 to the power expended; with 675 revolutions per minute, it delivered 290 gallons, with the same expenditure of power. The vanes of Appold's pump were curved, those of Gwynne had straight parallel radial channels; the superiority of the Appold pump is manifest from these figures. Bessemer's pump was inferior to the other two. The test of power, was Morin's Dynomometer, and the experiments were made under the superintendence of the celerbated Col. Morin himself. In these pumps the water is admitted at the axis of a hollow wheel traversed by vanes, and made to revolve rapidly, is expelled at the circumference: the pipe and from the supply reservoir is a suction, and if the wheel be enclosed and connected with a pipe extending upwards it becomes a force pump. If an unknown force was generated at the centre, and the water thrown off in radial lines, not at tangents to the circle, as contended for by some, the wheel with the radial arms would have produced the best effect; but, instead of this being the case, Appold's, with the curved arms, gave the best results. The velocity with which such pumps must be driven depends upon the height to which the water has to be raised, but beyond a certain velocity, the wheel cannot be driven without an immense loss of power; it is only in comparatively small lifts, where a large quantity of water has to be discharged, that the centrifugal pump will be found useful.

Railroads---Northern Travel.

America is the country, *par excellence*, for railroads; not that we have constructed such expensive lines as those in England, but we have the greatest number of them, and our country is laid out by nature for the grandest developement of such a system. Railroads came into existence just as our country had arrived at that stage of progress when they were demanded. We have broad lakes, and noble rivers—an inland navigation unsurpassed by any other country on the face of the globe. Still, these are not sufficient for the connection of our distant cities, and the rapid transit of merchandise and travel. The railroad is the modern grand developer of internal resources; every district through which a new railroad is constructed, seems to rise at once from a comparatively insignificant to a high position; the land quickly increases in value, and activity and commerce roll along the track, which once was a secluded valley or a barren wilderness. Our railroads are not only beneficial to the rural districts, but to our cities in a more extraordinary degree still. Near this city large villages are rapidly springing up, to which our weary merchants and mechanics are carried to enjoy the benefits of the country, after the day's toil is over. The low fares greatly facilitate this cito-rural system. The New York and New Haven Railroad, under the able superintendence of Geo. W. Whistler, Jr., son of the celebrated Major Whistler, who recently died in Russia, has been the means of doing, and is still doing, much good for this city and the people on its route; the fares on this road are reasonable, and thousands of workingmen, who cannot afford to pay high city rents, are carried to their business, and to their homes, morning and evening, at a distance of twenty miles, with the regularity of clock-work.—The villages are scattered along on the whole route, and troops get off at every station. This is a great benefit, certainly, to those people. This road is the grand route to and from the whole north-eastern parts of the continent. Travellers from all New England, Canada East and other British Provinces, all come to New York over this road; it is, therefore, one of the most, if not the most, important roads to this city, in the Union. It should be fostered and encouraged by all our citizens, for it is a general benefit. At present it connects with the Harlem road at William's Bridge, but this connection will cease in two years, when it must come into the city on a track of its own. We hope that every facility will be allowed to it by our city authorities; this it surely will receive, owing to its importance, and the benefits which accrue to this city from its commerce, and the means which it affords to merchants and mechanics, to come and go rapidly to and from their business.

Reaping Machines.

Our whole country is greatly excited and interested in the question of Reaping Machines. If the World's Fair, in London, had effected no other object than the direction it has given to the public mind in our own country, to look into the value and importance of our own reaping machines, it has sufficiently paid us for all our people expended in going to that country as exhibitors and visitors during the Great Exhibition. There is now a keen rivalry between our manufacturers and inventors of reaping machines; trials in different places announce to the agricultural and mechanical world, that the strife is hot and fierce, but as yet we have only had skirmishing, in comparison with the trials that may be expected next year. A few years ago, who heard of trials with reaping machines? Nobody. We like fair trials with machines to test their comparative value, and to afford persons interested the opportunity of examining them at work. The working value of a machine never can be determined by theory,—the only test is what it has done.

A very important trial of Reapers took place at Geneva, Ontario Co., N. Y., on the 20th ult., and continued three days. The trial was under the management of the State Agricultural Society—that able and enthusiastic agriculturalist, John Delafield, of Oakland, Seneca Co., being chairman of the judges. There were present at least five thousand farmers from various parts of the United States; thus showing what an extended interest is now felt in improved agricultural machinery. Seven mowing and twelve reaping machines were entered for trial. The names of the owners and their residences are as follows:—

Mowing Machines—Howard & Co., Buffalo, N. Y., Ketchum's Mowing Machine.

T. Rush Spencer, Geneva, Bronson Murray's Mowing Machine.

C. H. McCormick, Chicago, Ill., Mowing Machine.

A. C. Powell, Syracuse, Rugg's Mowing Machine.

T. D. Burrall, Geneva, Grass Cutter.

J. H. Manny, Wadham's Grove, Ill., Mowing Machine.

O. Hussey, Baltimore, Md., Mowing Machine.

Reaping Machines—J. H. Manny, Wadham's Grove, Ill., Reaping Machine, "Manny's Patent Adjustable."

Byron Densmore, Brockport, N. Y., Reaping Machine.

C. H. McCormick, Illinois, Reaping and Mowing Machine.

A. C. Powell, Syracuse, Rugg's Reaping and Mowing Machine.

E. Danford & Co., Geneva, Kane Co., Ill., Danford's Doubled Sickled Reaping and Mowing Machine.

A. J. Cook, Enon, Ohio, Reaping and Mowing Machine.

T. D. Burrall, Geneva, N. Y., Convertible Reaper and Grass Cutter.

Aaron Palmer, Brockport, N. Y., Palmer's Self-Raking Reaper.

John S. Wright, Chicago, Ill., Reaper and Self-Raker.

T. R. Hussey & Co., Auburn, Hussey's Reaper.

O. Hussey, Baltimore, Hussey's Reaper and Mower.

The judges will prepare their report, and present it, with the awards, at the Annual Fair, to be held at Utica next month, Sept. 7th. We are acquainted with a number of the judges; they are men qualified, in every respect, to decide upon the merits of the different machines. Although the committee appointed by the State Agricultural Society have made no report, yet we cannot forbear presenting a few remarks respecting the trials, as obtained from spectators.

The trial of mowing machines first took place. The character of the meadow was such as to put to the severest test the various machines. Ketchum's performed its work in the most perfect manner; indeed it could not be equalled with the scythe in the hands of the best mowers. At a similar trial in Springfield, a few weeks ago the Ohio State Society awarded to it its highest premium. Burrall's mowing attachment to his reaper came upon the ground at the eleventh hour in an unfinished state. Several of the machines proved complete failures; this was perhaps caused by bad management.

The second day of the trial was fixed for reapers in wheat, about three acres having been allotted to each machine, and the same quantity of barley. The contest was close, with quite a number of competitors; McCormick's entered the field first; its work was well done. Burrall's was the next on trial, and it performed admirably. It is strong, and substantially made, simple in its construction and operation, without a reel, cutting the grain in the most perfect manner, discharging it either at the side or behind in compact and well-formed gavels, and is adjustable to cut any required height.

Densmore's self-raking reaper was among the number tried. This machine obtained the Ohio State Society's highest premium, at its late trial at Springfield. It is a machine of much ingenuity, cutting the grain well, and discharging it by its own operation, at any distance required at the will of the driver.

Manny's adjustable reaper cut clean and smooth, and there was but one machine upon the field that did not *cut* the grain smooth and with less waste than it could possibly be done with the cradle, but many of them were objectionable on account of the gearing and the imperfect manner in which the grain was discharged.

On the third day the reapers were put into the barley, which was very low and upon rough and broken land. Here the difference in the work of the several machines was more strikingly apparent. Densmore's self-raker could not be adjusted to work well; Burrall's performed its part fully equal to its trial in the wheat.

The draft of each mower was tested by the dynamometer, and was only witnessed by the awarding committee. The result will be one of leading consideration in making their awards.

Illinois, it seems, is up and doing, as no less than four of the machines were from that state; there was but one from Ohio, and none from Pennsylvania, that great producing state,—little Maryland ahead of her; the Keystone State must look to its laurels. This trial at Geneva, also the one that was recently held in Ohio, will prove of great importance to farmers and inventors; we are not at the end of improvements on reaping machines yet.

American Literature Abroad.

A Quarterly journal is now published in Edinburgh, Scotland, entitled the "Foreign Evangelical Review," which is composed wholly of articles selected from the American religious Quarterlies, present and past, with the names of the authors. This proves what we said some time ago in respect to reading American Books.

Elihu Burritt is driving away at the cheap ocean postage in England. In a few years letters will be carried from this country to Europe for 5 cents; it costs 24 for a single letter now.

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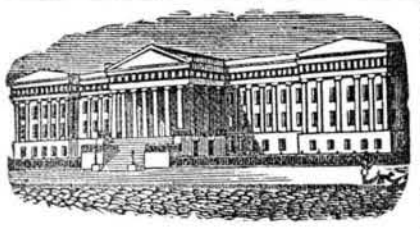

Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING AUGUST 17, 1852.

VENTILATORS—By M. M. Camp, of New Haven, Ct.: I claim the two cones, arranged and combined with a ventilator, composed of revolving vanes and flanges and cylinders, operating as described and set forth.

FILE CUTTING MACHINERY—By J. W. Conklin, H. L. Sidman & Eugene Whritner, of Ramapo, N. Y.: We claim, as constructed and combined, the racks, pinions, cams, or eccentrics, rod, and springs, in connection with the vibrating hammer, as described, for the graduation of the blow at the commencement of the operation.

WROUGHT-IRON RAILROAD CHAIRS—By Robert Griffiths, of Newport, Ky.: I claim, first, the arrangement and combination of the feathered wedge and dies, as described, for filling the cavity between and fitting around the knuckle end of the shears and benders, forming an adjustable solid and level bed, for the centre of the plate, whilst being cut and bent, and preventing the fulcra of the shears and benders from moving towards the centre, away from the set screws.

Secondly, I claim furnishing the caps of the pedestals with adjustable cutters, the cutting edges of which are nearer to each other, at the outer than at the inner end, and which shear the plate, in conjunction with the cutters on the face of the shears, which are narrower at their outer than their inner end, in order to cut the clip of the chair narrowest at the point, and thereby leave it perfectly free and clear of the cutters in the cap, so that the cap will lift free from the plate.

SPARK ARRESTERS—By J. Leeds, G. H. Oat, Jr., & Alfred A. Oat (assignors to Jos. Leeds), of Philadelphia, Pa.: We claim, combining with a stack or chimney, provided with chambers and openings, for separating and passing out the smoke and gases, and retaining the sparks, substantially such as described, the draft flue around the stack, which takes in air at the bottom, and furnishes at the top of the chimney additional draft to supply that impeded by the separation of the sparks, the whole being arranged substantially as set forth.

COTTON PRESSES—By Lewis Lewis, of Vicksburg, Miss.: I claim the arrangement of the press described in such manner that it may be conveniently charged in an upper story of the building in which it is placed and actuated and discharged in a lower story of the same, substantially as set forth.

HERNIA TRUSS—By A. J. Lounsberry, of Sommerville, Tenn.: I claim the peculiar shape of the two balls, and their arrangement upon the slides, so that they may be moved upward and downward, and right and left, to any part of the metallic plate on the pubic brace, and thus be fitted to any rupture in the abdominal rings, or on any sized person, and their combination with the pubic brace, as described.

ARTIFICIAL LEGS—By B. F. Palmer, of Philadelphia, Pa.: I am aware that the tendo Achilles has been extended upward, and attached to the thigh piece, for the purpose of drawing upward the heel, and depressing the forward part of the foot, when the leg is straightened, and therefore I do not claim that arrangement.

But I claim attaching the upper end of the tendo Achilles to a lever, or to its equivalent mover, which is united to an auxiliary tendon, that descends from its connection with the thigh piece: and also so arranging the said levers and tendons, that when the weight of the person is thrown upon the ball of the foot in walking, the powerful downward strain which will thereby be exerted upon the tendo Achilles, will exert little or no influence upon the said auxiliary tendon (which descends from the thigh piece) or at any rate, no influence that will have an appreciable tendency to bend the knee, or give instability thereto, substantially as set forth

I also claim the vibratory brace and elastic cord, operating in combination, substantially in the manner and for the purpose set forth.

NECK YOKE OF HORSES—By C. L. Rawdon, of Bristol, O.: I claim the spiral springs, operated by the rods giving extension and contraction to the yoke, in the manner and for the purpose set forth.

ARTIFICIAL LEGS—By Jona'n Russell, of Philadelphia, Pa.: I claim so operating the lever through the spring, by means of the cords (two) which are respectively attached to and operated by the toe and heel part of the foot, as that when the leg is bent forward or back on the ankle joint, the knee joint shall be locked by said lever, substantially as described.

BEDSTEAD FASTENINGS—By Wm. Shaw, of Clarion, Pa.: I claim the plug, as described, in combination with the clamp or clamps, for fastening bedsteads.

HOT AIR FURNACES—By G. S. G. Spence, of Boston, Mass.: I do not claim a descending draft, as such, or an alternately descending and ascending draft, nor a draft divided and carried in different directions, through several pipes, or columns, at a time; nor one undivided draft, carried through several pipes or columns, at a time; but I claim the combination and arrangement of the ash or soot, separate chambers, and the flues, from whose external surfaces, the heat is radiated into the air chamber of the hot-air furnace; that is to say, I claim the combination and arrangement of the descending flue, at and down the back of the fire-place, the ash flue chamber, D, the ascending and descending arched pipe, the ash flue chamber, H, and the vertical flue discharge pipe, carried up against the back of the fire place, and having a communication with the fireplace, and a damper, all substantially as specified.

MACHINERY FOR FORMING HAT BODIES—By T. Walber, of New York City: I wish it to be understood that the apparatus for picking and separating the fur, forms no part of my invention; neither does the movable trunk, all these parts being well known, neither do I claim retaining the fibre on the former by exhaustion by a blower, that being public property, having been shown in a patent issued to T. R. Williams, in England, in 1833; neither do I claim the use of water, to form the packing for the cylinder, that having been used in other machinery, and hot and cold water have been used in felting cloth and hat bodies, therefore this forms no part of my claims.

I do not limit myself to the screw, to raise and lower the former and trunk, as a rack and pinion, or similar means may be used.

But I claim, first, the combination of the water-packed cylinder, former, and sliding and revolving shaft, for the purposes described.

Second, I claim giving alternate motion to the former, and blower case, so that one is raised while the other is lowered, in the manner and for the purposes described.

Third, I claim the hood, with its lining, by which steam or other gaseous pressure, is made to force the bag or lining, on to the bat or former, in combination with the standing perforated pipe, or its equivalent, by which the bat is wetted, through the perforations in the former, as described.

CALORIFIERS—By Samuel Whitmarsh, of Northampton, Mass.: I claim the combination of the water supply reservoir, the chamber or bed of sand, and a furnace or chamber of combustion, the whole being made to operate substantially as specified.

CURRIERS' BEAM AND KNIFE—By James D. Willoughby, of Carlisle, Pa.: I claim the construction of a curriers' beam, with flaps, on its edges, furnished with springs and gauges, or their equivalent, for the purpose of dispensing with the kneeing, and prevention of cutting through and production of regular thickness of leather.

I also claim the construction of a knife made adjustable by the eccentric handle, or its equivalent, in connection with the gauges or guides, substantially for the purpose set forth.

PROCESSES FOR MAKING PAINTS—By W. F. Davis (assignor to Birdsill Cornell), of New York City: I am aware that various mixtures of gelatine, albumen, gums, and gum resins have been used in watery solutions, for making a cheap paint that cover extensive surfaces; but such paints as the gums, dry crack, and leave fissures in the surfaces so covered, and have other defects: I do not claim, therefore, the use of watery solutions with such materials.

But what I claim is the use of a watery solution of a sulphate of zinc, to be mixed with white lead, zinc white, or other oil paints, in the manner set forth.

CORD BUTTONS—By Nelson Perkins, of Wawarsing, N. Y. (assignor to Samuel Dow, of Westfield, Mass.): I claim the preparation of the cords, in the process of manufacturing cord buttons, by glueing them together, substantially as set forth.

FASTENER OF BITS TO BRACES—By Erasmus Smith (assignor to David Maydole), of Norwich, N. Y.: I claim the combination of the cam lever with the lever spring-catch, for securing the bit in the socket, and releasing it therefrom, the same being constructed, arranged, and operating substantially as described.

DESIGNS.

PARLOR STOVE—By D. Arnold, of Providence, R. I.

SIX PLATE STOVE—By Samuel F. Pratt, of Boston, Mass. (assignor to Jagger, Treadwell & Perry,) of Albany, N. Y.

COOKING STOVE—By J. S. Perry (assignor to Jagger, Treadwell & Perry), of Albany, N. Y. Two designs.

Patents of Americans taken out in Britain.

From June 17th to July 22, 1852.—Charles Barrington, of Philadelphia, for an improvement in Boiler Feeders.

Be Careful of Turpentine.

The Boston "Traveller" of the 16th inst. inst., records a serious accident in Sandwich, by which three daughters of the Rev. J. Marsh were severely (perhaps fatally) burned by a camphene explosion. Two of them were engaged in filling a lamp from the can; one of them holding a lighted lamp, it is said, at a considerable distance from the lamp which they were filling. By some means—undoubtedly by a stream of gas from the fluid—the flame of the lighted lamp was communicated to the can, which caused an immediate explosion. There is a general ignorance abroad respecting the volatile nature of some fluids, and the explosive character they assume when mixed with air. Turpentine, when heated to 110°, gives off a vapor sufficiently dense to make air explosive at the approach of light. Now, this fact should be spread far and wide, as it respects turpentine, and along with it we must class alcohol, and other volatile hydro-carbons.

Balloon Ascensions.

Mr. Wise, the most successful of American Aeronauts, says the Cleveland Herald, is busy going up and coming down in Ohio. He has made a dozen or more ascensions from the principal towns in our State, and proposes to make three from Cleveland during the Fair. At Portsmouth he encountered a thunder-storm in mid-air, and he had an exciting and perilous adventure. Mr. W. made an ascension at Mansfield, July 17th, rose to the height of 11,000 feet, and had a fine view of Lake Erie, and the towns and country around. On the 24th he went up at Wooster, and at Massilon on the 31st, made his 139th ascension, travelling over 30 miles. Mr. W. will make an ascension from Ravenna, August 14th. Great crowds have assembled at all the towns Mr. W. has taken his flight from, to witness the interesting exhibition.

In all likelihood, the celebrated wine of Madeira will become only a matter of history—a blight has destroyed the entire vintage this year, and it is feared that the whole of the vines will be destroyed.

Woodworth Patent.

[Continued from page 390.]

It is true that in many cases, the rights were assigned for gross sums for particular periods; but the burden upon the public is equally great whether the tribute be paid to the patentee in person or to his voluntary assignees. The government has discharged its duty when it has paid the debt. It neither can nor ought to guarantee the recipient against the consequences of his own act, if he chooses to squander what the law bestows. When the last grant was given, there remained to the administrator an unexpired term of nearly five years, and the extension then granted for seven years in addition, was equal, upon his own showing, to a tribute of three millions per annum, or a direct grant of $21,000,000. If he chose to part with this for $50,000 or $100,000 without reserving to himself some further equivalents beyond those which appear upon the face of the recorded papers, it was an act of strange improvidence, with which the government has nothing to do. If the terms on which he afterwards parted with the re-issued patent were equally unfavorable, and upon that point the committee have no information, the government has no share of responsibility. It neither imposes upon Congress the obligation, nor invests them with the right to fasten upon the country for his benefit, an immense burden of taxation for another term of fourteen years. The committee, however, are not able to believe that the memorialist has not profitted amply by the previous bounty of Congress. Be that as it may, the debt has been paid by the country, and overpaid many hundred fold. The invention of William Woodworth has no claim to further remuneration. There are other considerations which the committee cannot overlook, arising from the facts developed in the course of this investigation. It has been seriously claimed on behalf of the memorialist, that an immense reduction was made in the expense of dressing lumber by the introduction of the Woodworth invention. It is stated in a printed opinion of one of the counsel for the administrator, which was submitted to the committee, that this reduction was in the proportion of nine-tenths. From this would follow the startling anomaly that the price of dressing boards by hand would be from fifty to seventy-five dollars per thousand feet. It is stated in the printed argument of the counsel for the administrator that the cost of dressing boards by hand was twenty-five dollars per thousand feet. The extravagance of both these statements is shown by the affidavit of Mr. Woodworth himself, and the subjoined affidavit of Mr. Gibson, another owner of the right, made for the purpose of procuring the extension of 1842—both showing that the cost of dressing flooring by hand did not exceed eight dollars per thousand feet. But the committee find upon investigation that lumber was in fact dressed by hand in the State of New York, before the introduction of the Woodworth machine, for between five dollars and five dollars and fifty cents per thousand; and in other localities at similar relative prices in proportion to the rate of wages. With the Woodworth machine the work was done at an early period for three dollars and three dollars and fifty cents per thousand, a price affording a large and ample remuneration.—But as the competition by hand labor was gradually broken up, the price was increased to four dollars, at which point it stood, as admitted by William W. Woodworth, when he made his application for the second extension. But no sooner was that extension granted by Congress, than further exactions were made upon the public. The price was raised to the very verge of the cost of dressing lumber by hand. The general price now, as admitted in the printed statement submitted on the part of the memorialist, is five dollars per thousand feet. Thus each grant from government gives occasion for increased exaction. Of the $15,000,000 annually paid by the public for dressing lumber in the Woodworth machine, $6,000,000 is paid to meet this advance from three to five dollars in the price—the difference being a clear excess beyond what was at first received by the patentee as an ample remuneration, covering cost and profit as well as tribute money. But as illustrations of the fact that still more rigorous exactions are made in localities where there is less occasion to apprehend competition from hand labor or rival machines, the committee find by the abstracts obtained from the Patent Office, that licenses have been granted under this patent in the State of Pennsylvania, prohibiting the dressing of lumber for less than six dollars per thousand, and in the State of Ohio, prohibiting it for less than seven dollars per thousand.

But in considering the merits of this extraordinary claim upon the bounty of the government, it is important to look at the effect of previous grants in another aspect. The argument in favor of the extension overlooks the fact, that numerous and valuable machines for dressing lumber were in existence before the date of the Woodworth invention, and assumes that but for him the whole country would still be planing boards by hand. The fallacy of this assumption is manifest. A ready illustration is furnished in the invention of Uri Emmons, the superier merit of which was not only acknowledged by the elder Woodworth, but is practically admitted by his administrator himself, in constructing his machines to this day in substantial conformity with the Emmons patent, instead of the Woodworth patent of 1828, as well as incorporating the leading features of the Emmons machine in the re-issue obtained in 1845.—Other subsequent inventions in the same department, far surpassing that of Woodworth in merit and value, have shown that neither of those patentees can be regarded as entitled to the foremost rank in this branch of mechanical genius. But by means of the new claims of the reissued patent, the shifting construction of those claims by a co-ordinate branch of the government, and the power with which the administrator was clothed by the unlimited revenues of the extended terms, the proprietors were enabled to wage successful war upon almost every conceivable form of planing machines, and thus virtually deprive the public of the benefit of the successful inventions made in this branch of the arts for a quarter of a century.

The continuance of these prospective grants makes it the interest of the grantees to shift and expand their claims so as to beat back competition, by warring upon each new machine as an infringement. It has been practically demonstrated that planing machines of more recent invention, with a new organization of elements, are not only able to dress lumber with far greater speed and perfection but to do the work at a cost of less than one dollar per thousand feet. The public are now paying fifteen millions of dollars a year for work done by the Woodworth machines, which the facts before the committee show can be better done by the use of the other machines, at a cost of three millions. But even these machines are met by the owners of the Woodworth patent with the customary charge of infringement, and they are now attempting to procure the sanction of the courts to a new construction of their patent, going even beyond the re-issue, and claiming, virtually, that the patent was granted for results, instead of mechanical agencies to produce them, and that all possible machines in which a board is held in proper position to be reduced to a uniform thickness by the removal of the surplus material, are infringements upon the Woodworth invention. It is true that this construction has been repudiated by the courts whenever it has been advanced, but it has not been abandoned; it will still be insisted on; and when the public are told that they must pay the Woodworth machine fifteen millions annually for doing their work imperfectly, and that they must not use the machines in which the work can be better done for three millions, the inquiry very naturally arises whether the Woodworth invention, in view of all these facts, is to be regarded as a public benefit or a public calamity.

American Association for the Advancement of Science.

In consequence of the prevalence of disease in the West, and along all the avenues of approcah leading to the city of Cleveland, the meeting of the American Association for the Advancement of Science, appointed for the 18th of August has been postponed for the present year by the Standing Committee.

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TO CORRESPONDENTS.

J. H. M., of N. C.—There is no patent for printing copper plate cards. The system of printing is entirely different; the art is one by itself, which must be learned like any other; the press used, the manner of putting on the ink, are different, and the plates are warmed during the operation. We can describe the whole process to you, but we do not think you would be half so much benefitted thereby as to go into a copperplate pressroom for ten minutes.

J. McC., of Pa.—Rumsey's patent for propelling was granted in 1791; he took out several other patents on different species of mechanism, and was considered in those days a remarkable inventor.

E. B. C., of Vt.—If your father invented and put his machine in use nine years ago, he need not be alarmed about any one collecting damages of him or stopping his using the original machine.

A. A, H., of N. Y.—Various plans for operating car brakes by the locomotive have been brought before the public from time to time, but they have all been attended with insurmountable objections. Your plan, we think, has been tried, but we can give no data as to time or place, nor by whom.

C. J. C., of L. I.—Your plan for the preservation of life, in case of accident on steamboats, might be of service under certain circumstances, but the difficulty which would attend keeping the air receiver tight, when exposed to such hard usage as chairs and settees usually are on board of steamers, would prevent your plan ever being adopted, omitting the objection of the furniture appearing clumsy with such an attachment.

A. B., of Pa.—A composition of gum elastic has been employed in some of the British war steamers, but it will not answer as a substitute for copper.

J. S., of Ky.—Your letter has just come to hand.

N. S., of Me.—In trying to make gum of starch, you must have used too much water and too high a heat: the heat should never be raised over 320 deg. Fah., and that gradually. The starch is placed on an iron or tin pan, in an oven, or in a revolving heated drum,—it must not be over-heated, or it will get quite brown; it should not be made wet, merely moist, and gradually dried, before it attains its full heat.

H. W. Parr, of ——.—Mr. Howd has obtained two patents on water wheels, one in 1838 the other in 1842. The first has expired, the second has not. We believe the wheel is a good one. Excavating machines can be had of A. Frasier, Syracuse, N. Y. If you will inform us of your post-office address we will send you the Scientific American to the amount of $2 enclosed in your's. Persons ordering the paper should be particular in giving the name of the post-office and the State where the paper is to be addressed—this saves much delay and consequent perplexity.

D. D., of Ill.—Your plan for forming tires for wagon hubs, and the mode you describe of fastening the tire to the wheel we believe to be new and patentable.

G. E., of Phila.—We should think your plan might work very well, still it puzzles us to discover any point upon which a claim could be sustained. It is a modification of a well known arrangement for the same purpose.

A. M. G., of S. C.—Such an engraving as you mention would cost not less than $15. The method you propose to prevent the breakage of railroad axles is old and well known.

S. R. K., of N. Y.—Your invention is a most excellent one, and we have no doubt you can obtain a patent, and it will be a remunerative one. Your fortune, we believe is made if your manage your invention with prudence, spirit, and tact. You must advertise well, else how can the public be informed about it. You cannot travel all over the country exhibiting it in every village and to every person. No, you must advertise, and do so thoroughly; the public look to the press for information about these things.

S. H., of Ind.—It will be necessary for you to appear in person, and explain your invention to the Committee, or it might be done through another. We have no idea of your invention from the incongruous sketch; it shows nothing to our understanding. Applications are pouring in upon us from all quarters, wishing us to take charge of inventions at the Fair: it is utterly impossible for us to do so.

A. B. A., of Ala.—We can furnish you a mortising machine for $20, which will be just the article you need; your other inquiries we cannot answer. Perhaps if you will address Mr. S. C. Hill, whose advertisement appears in another column, you may obtain information in regard to the prices of the other machines.

W. H., of Pa.—The diagram you send, of an alleged improvement in roofing, is essentially the same as one that was rejected by the Patent Office about six months ago. There would be no chance for you should you apply.

C. B. F., of Pa.—The patent referred to was granted in 1850, and for aught we can discover, the patent is a valid one; the claims at least are good. Peter Peters is an individual that we have never known. $1 received—all right.

T. H T., of N. Y.—The description and drawing of your improvement is received, and placed on file as you requested.

Money received on account of Patent Office business for the week ending Saturday, Aug. 21:

J. F. M., of Pa., $30; S. & S., of N. Y., $10; O. W. S., of Ct., $25; C. B. H., of N. Y., $70; P. D., of Pa., $30; H. O. E., of N. Y., $25; J. P. M., of Mass., $20; J. P. & Co., of Ct., $25; J. J. W., of Mass., $30; E. B., Jr., of N. Y., $55; E. F., of Ct., $30; F. T., of N. Y., $18; S. G., Jr., of D. Y., $26.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Aug. 21:

C. B. H., of N. Y.; E. B., Jr., of N. Y.; O. W. S., of Ct.; S. I., of N. Y.; B. S. S., of Ct.; H. O. E., of N. Y.; S. K. W., of S. C.; S. G., Jr., of N. Y.; J. F. W., of Ct.; I. F. B., of Ga.

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In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

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Of Vol. 7, all back numbers at subscription price.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office;—stating the name of the patentee, and enclosing one dollar as fee for copying.

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We publish, and have for sale, the Patent Laws of the United States. The pamphlet contains not only the laws but all information touching the rules and regulation of the Patent Office. Price 121-2 cts. per copy.

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American and Foreign Patent Agency

IMPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express or any other convenient medium. They should not be over 1 foot square in size, if possible. Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

CAUTION—Whereas, certain persons are manufacturing and selling Fan Blast Separators, or Winnowing Machines, which infringe upon my patent, which was issued on the 8th day of April, 1851. This, therefore, is to caution all persons against purchasing any right or privilegas of any person whose machine conflicts with mine, as set forth in my Letters Patent, whether their machines have been patented subsequent to mine, or not covered by Letters Patent, as I shall hold every trespasser of my rights to strict account. Any person holding powers of attorney from me, which have not been legally recorded, are cautioned against disposing of territorial rights, or manufacturing and selling machines, and the public are likewise cautioned against purchasing rights of such persons. J. L. BOOTH, Patentee, Cayuga Falls, Ohio. 50tf

ARTESIAN WELLS—Thomson's patented improvement on the Chinese system of boring Artesian Wells, in search of water or minerals, having been practically tested, capitalists, land proprietors, miners, and others, are informed that rights are for sale for any part of the United States. The machines can be had of the patentee, and are warranted; they come cheaper than the usual boring apparatus, are more managable, bore more rapidly, with but little increase of labor, however deep, and will go to depths much greater than the present system admits of. The cleaning is done in a fraction of the usual time. Communications will be answered cheerfully and working models sent on receipt of $5.

JOHN THOMPSON,
50 4* 75 Otter st., Kensington, Philadelphia.

TO STEAM ENGINE BUILDERS, OWNERS, and Engineers.—The subscriber having taken the agency of Aschroft's Pressure Gauges, would recommend their adoption to those interested. They have but lately been introduced into this country, but have been applied to many of our first-class river and ocean steamers, and on many railroads, on all of which from their simplicity, accuracy, and non-liability to derangement, they have given the utmost satisfaction. CHAS. W. COPELAND, Consulting Engineer, 64 Broadway, N. Y.
50 5*

CHAS. W. COPELAND, Consulting and Mechanical Engineer, Surveyor of Steam Machinery, &c., No. 64 Broadway, N. Y., superintends the construction of steam vessels, steam engines, and machinery of every description; specifications and contracts prepared; also general plans and drawings in detail furnished. Steam engines surveyed and valued, and condition reported. Mr. C. also acts as agent for the purchase and sale of steam vessels, steam engines, boilers, &c. Steam and Vacuum Gauges, Indicators, Sewell's Salinometers, etc, etc., on sale. 50 5eow*

DRAWING BOARDS—Patent; 23 by 29 inches, with extensive Scale and Sheet Fastener. Descriptive Circulars sent on application; $10 for Board and T Rule. Sent by Express Address, postpaid, CHAMBERLIN & CO., Pittsfield, Mass. 50tf

IMPORTANT TO ENGINEERS—The subscribers have now ready seven parts of the celebrated treatise on "American Engineering," viz, division A, River boat Engines; B, Marine ditto; C, Locomotives; D, Stationary ditto; each division of six parts will be complete in itself; the plates measure 24 by 30 inches. Price for each part, $1; liberal allowance to agents. H. S. SAMUELS & CO., 8 Park Place, publishers, New York. 1*

IMPORTANT TO IRON FOUNDRIES—The Galvanic Alloy Manufacturing Co., Nos. 401, 403, and 405 Cherry st., N. Y., will furnish the Aerostatic Fan Blower at $55, and with patent fitting at $65, that produce sufficient blast for the largest cupola, melting 3 and 4 tons of iron per hour; taking less than one half the power of those now in use, that cost from $80 to $100. The wings, being only about an inch in width (planned upon entirely new and mathematical principles), produce double the blast with half the power of other blowers. Warranted in all cases, or they may be returned and the money refunded. 38 eowtf.

WOODWORTH'S PLANING MACHINES, on hand and manufactured to order, of superior quality, at reduced prices; warranted perfect. Also steam engines and other machinery, by JOHN H. LESTER, 57 Pearl st., Brooklyn, L. I. 502*

PATENT RIGHTS FOR SALE—The subscriber having secured a patent on his improvement in operating doors to houses, would like to dispose of town, county, or State rights, on very cheap terms, The invention is a good one, and has fourteen years protection by Letters Patent. Engravings of this invention will be found in another column of this paper, and for further particulars address WM. RIPPON, Providence, R. I. 48 4*

IMPORTANT TO SOAP MAKERS—Letters Patent of the United States having been issued to Wm. McCord on the 27th of July, for a valuable improvement in Soap, all manufacturers, venders, and users are hereby cautioned against the use of Kaolin, or other equivalent aluminous minerals, combined with ammonia, as they will, by so doing, infringe this patent, and subject themselves to prosecution. All the necessary fixtures for making 2000 lbs. per day, will cost not to exceed $75; two persons only required to attend the manufacture. Rights to manufacture this the most valuable soap, are offered for sale on reasonable terms. Apply to WM. McCORD, 141 Sullivan st., N. Y. 47tf

WARRANTED CAST STEEL—About 30 tons assorted sizes, warranted quality cast-steel, to close the sale of a special lot; it is particularly adapted to machinists use, and will be sold in lots of 500 lbs. and upwards, at 33 1-3 per cent. less than cost or price of the best imported. Amongst the sizes are square, 1-2, 5-8, 7-8, 1 1-8, 1 1-2, and c. flat, 1 by 3-8, 1 3 8 by 1-2, 1 1-2 by 1-2, 1 I-2 by 3-4, 1 1-4 by 5-8. Also small and large sizes: also rolled 1 1-8 by No. 4, 1 1-4 by No. 4 wire gauge. Round 5-16, 7-16, 9-16, 5-8; it is well worth the attention of consumers. JOHN W. QUINCY, 81 John st. 49 4*

AMERICAN RAILWAY TIMES—This is a large weekly journal, issued on Thursdays, well filled with matter concerning every element of the Railway System, viz., financial management, construction, depreciation, improvements in running and machinery,—and every other subject connected with the general economy of the system, furnished from the pens of the most intelligent engineers and practical railway men in the United States. It likewise contains intelligence upon all the railway enterprizes of the country; statistical tables of receipts, expenditures, and income; reports of railway law cases; movements of money and trade; review of the money market; prices current of stocks, etc., etc. John A. Haven; Editor. Price $3 per annum. HAVEN & JONES, publishers, 27 Devonshire street, Boston. Mass. 49tf

A RARE CHANCE—TO MACHINISTS—Assignee's sale of Machinists' Tools: these tools have been in use about four months, and consist of Planers, Lathes, Drill Presses, and Universal Chucks, which are for sale from 20 to 25 per cent. less than cost. For particulars address (post-paid) JOHN PARSHLEY, New Haven, Ct. 49tf

IRON FOUNDERS MATERIALS—viz.: good American Pig Iron—grey, mottled and white; No. 1 Scotch Pig Iron, of favorite brands. Pulverized Sea Coal, Anthracite Charcoal, Soapstone, and Black Lead Facings. English and Scotch patent Fire Bricks—plain, arch, and circular, for cupolas. Fire Sand and Fire Clay. Iron and brass moulding sand; Core sand and flour; always on hand and for sale by G. O ROBERTSON, 135 Water street (corner of Pine), N. Y. 47 6*

PIG IRON MANUFACTURED WITHOUT A BLAST—Persons taking an interest in this matter, or desiring to participate in bringing this new process to perfection, will please to address the subscriber, post-paid. C. S. QUILLIARD.
Rondout, Ulster Co., N. Y. 47 4*

PATENT DRAWING BOARDS,—23 by 29 inches; with scales of degrees in inches, minutely divided. Also paper fastener attached, and T rule. Complete for $10. Sent by Express. Direct (post-paid) to H. W. CHAMBERLIN,
45 tf Pittsfield, Mass.

AARON KILBORN, 4 Howard street, New Haven, Ct., manufactures Steam Engines, Shafting, Presses, Fan Blowers, Lathes, Planers, Artesian Wells, Chain and Force Pumps, Pipe, Heating Apparatus for Houses, etc. 42 10*

PATENT ALARM WHISTLE.—Indicators for speaking pipes, for the use of hotels, steamships, factories, store-houses, private dwellings, etc. etc. This instrument is intended to supersede the use of the bell, being more simple in its arrangement, more effective in its operation, and much less liable to get out of order, being directly connected with the speaking pipe, it requires no lengthy wires in its use, which are continually getting out of order or breaking. There have been several hundreds of them fitted up in this city and vicinity with the greatest success. They can be attached to pipes, which are already fitted up without damage to buildings, and for much less than the cost of a bell, and warranted to operate. The public are invited to call and examine them at the factory of the patentees.

WOOLCOCKS & OSTRANDER.
57 Ann street, New York.
State and County Rights for sale. 40 13

CHILDS & TAINTER, Worcester, Mass, Builders of Daniel's Planers, with Read's feed motion, which gives the advantage of planing both ways, and of running slow or fast, either way. 45 6*

BEARDSLEE'S PATENT PLANING MACHINE, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway; Albany. GEO. W. BEARDSLEE. 23tf

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery oil, Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 26 tf

WOOD'S IMPROVED SHINGLE MACHINE—Patented January 8th 1850, is without doubt the most valuable improvement ever made in this branch of labor-saving machinery. It has been thoroughly tested upon all kinds of timber and so great was the favor with which this machine was held at the last Fair of the American Institute that an unbought premium was awarded to it in preference to any other on exhibition. Persons wishing for rights can address (post-paid) JAMES D. JOHNSON, Bridgeport, Ct.; or WM. WOOD, Westport; Ct., All letters will be promptly attended to. 22tf

TO INVENTORS—The subscribers will enter into arrangements, on the most reasonable terms, for furnishing Drawings, Patterns, and Models, believing that they have one of the most thorough and scientific men, in that line of business, to be found in New York. Their object is merely to fill up time, they not having sufficient work of their own to keep him in steady employment, and do not like to have him leave for fear they could not obtain his services when required. Apply at Dunlop's Manufacturing Emporium, No. 36 Gold street.
41 13* FRASER & EVERITT.

PAINTS, &c. &c.—American Atomic Drier Graining Colors, Anti-friction Paste, Gold Size, Zinc Drier, and Stove Polish.
QUARTERMAN & SON, 114 John st.,
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LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post.paid) MUNN & CO.
At this Office.

1852 TO 1856.----WOODWORTH'S PATENT Planing, Tongueing, Grooving, Rabeting, and Moulding Machines.—Ninety-nine hundredths of all the planed lumber used in our large cities and towns continues to be dressed with Woodworth's Patent machines. Price from $150 to $760. For rights in the unoccupied towns and counties of New York and Northern Pennsylvania, apply to JOHN GIBSON, Planing Mills, Albany, N. Y. 26tf

LEONARD'S MACHINERY DEPOT, 109 Pearl-st. and 60 Beaver, N. Y.—Leather Banding Manufactory, N. Y.—Machinists's Tools, a large assortment from the "Lowell Machine Shop," and other celebrated makers. Also a general supply of mechanics' and manufacturers' articles, and a superior quality of oak-tanned Leather Belting.
45tf P. A. LEONARD.

PATENT CAR AXLE LATHE—I am now manufacturing, and have for sale, the above lathes; weight, 5,500 lbs., price $600. I have also for sale my patent engine screw lathe, for turning and chucking tapers, cutting screws and all kinds of common job work, weight 1500 lbs., price $225. The above lathe warranted to give good satisfaction. J. D. WHITE, Hartford, Ct. 39 26*

A. B. ELY, Counsellor at Law, 46 Washington st., Boston, will give particular attention to Patent Cases. Refers to Munn & Co., Scientific American. 13tf

TRACY & FALES, RAILROAD CAR MANUFACTORY—Grove Works, Hartford, Conn. Passenger, freight, and all other descriptions of railroad cars and locomotive tenders made to order promptly.
26tf

LOGAN VAIL & CO., No. 9 Gold street, New York, agents for George Vail & Co., Speedwell Iron Works, have constantly on hand Saw Mill and Grist Mill Irons, Press Screws, Bogardus' Horse-Powers, and will take orders of Machinery of any kind, of iron and brass; Portable Saw-mills and Steam Engines, Saw Gummers of approved and cheap kind, &c. Gearing, Shafting, large and small, cast or of wrought iron. 11 1y

NEW HAVEN MANUFACTURING COMPANY, Tool Builders, New Haven, Conn., (successors to Scranton & Parshley) have now on hand $25,000 worth of Machinist's Tools, consisting of power planers, to plane from 5 to 12 feet; slide lathes from 6 to 18 feet long; 3 size hand lathes, with or without shears; counter shafts, to fit all sizes and kinds of universal chuck gear cutting engines; drill presses, index plates, bolt cutters, and 3 size slide rests. The Co are also manufacturing steam engines. All of the above tools are of the best quality, and are for sale at 25 per cent. less than any other tools in the market. Cuts and list of prices can be had by addressing as above, post-paid. Warehouse No. 12 Platt st., New York, S. C. HILLS, Agent N. H Man'g Co. 45tf

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SCIENTIFIC MUSEUM.

Printing in Gold.

The following from the Report of the Jury of Class 17, of the Great Exhibition, will be read with great interest by our readers:—

Dibdin, in his "Decameron," (Vol. 2, p. 416,) states, that "This country has also an honor and a treasure to boast of in Mr. Whittaker's 'Magna Charta,' printed in letters of gold, with illuminations. His manner of operating is yet a secret. The Society for the Encouragement of Arts, offered Mr. Whittaker a premium for his ingenuity, upon the condition, as is usual, of his making the process known; but Mr. Whittaker, aware of the importance of keeping it secret, declined the premium. There are some copies on vellum beautiful, splendid, and characteristic, beyond any similar work (I had almost said ancient as well as modern) which it has ever been my good fortune to behold. Indeed, taking it 'all in all,' those who have not seen such an union of typographical and graphical skill as those illuminated copies display, can have no idea of the extraordinary felicity of their execution."

The method adopted by Mr. Whittaker is the following, for which the Jury is indebted to Mr. John Harris, who was employed on the work. The page is composed in movable type, in the usual way; a stereotype plate is taken. A piece of iron of the size of a page, about half an inch in thickness, is made hot, and placed on the table of an ordinary typographical printing-press; the sterreotype plate is then placed on the iron plate, and gets warm, and leaf gold of an extra thickness, of the size of the plate, is laid very carefully on the surface of the plate; then the paper or vellum is placed on the tympan in the usual way, having been previously sifted over with dried glair of egg and rosin finely pulverized, which adheres to it in sufficient quantity; the tympan is then turned down, and the pull dwelt on. The degree of heat must be ascertained by practice; if the plate be too hot, the gold is dead and drossy; if too cold, then it appears bright but imperfect. This process is similar to that now used by bookbinders in block-gilding with an arming press.

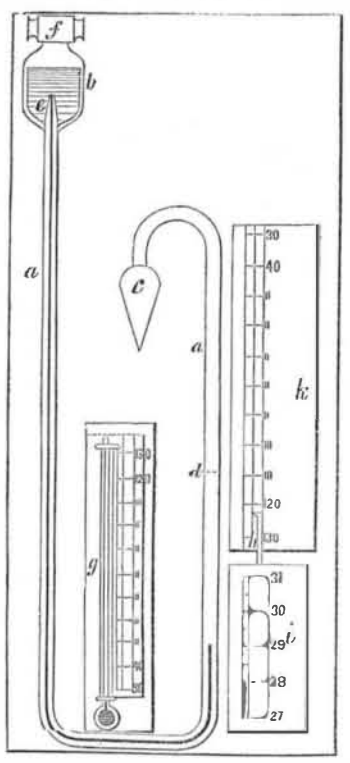
About twenty years ago, M. Sturtz introduced into England printing in gold from copper plates. His process was, to mix with printers' ink, weak burnt oil, a certain quantity of gold or silver bronze, to the same consistency as that of strong copper-plate ink, and filling the plate with it, to dab it in with the fingers. The plate had to be engraved deeper than usual, and when filled, it was delicately cleaned off first with a rag dipped in a weak solution of pearlash, and then with the palm of the hand, in the usual way. It was afterwards submitted to a heavy impression of the copper plate press, being printed in the manner called thorough-press, and the impression, when dry, polished by passing it through the press several times, with the printed face against a highly-polished steel plate, by which a beautiful brightness was imparted to the bronze. This process, decidedly the best where great perfection is required, has been abandoned by most of the copper-plate printers for the cheap and less tedious one of first printing with a colored-ink ground with gold-size and oil, and then rubbing the bronze on the paper when just printed.

Printing in gold by letter-press soon followed the method of copper plate gold printing. Messrs. Vizetelly and Branston were the first to apply it; and their visiting and address cards, printed by letter-press, from rose-engine plates, have never been surpassed for the brightness and beauty of their execution.

About the same peaiod, Mr. De La Rue, in conjunction with the late Dr. Balne, of Gracechurch street, produced a large royal 8vo edition of the New Testament, printed in gold twenty-five copies of which were in pure gold powder. Nothing has since been produced equal to this unique edition. At the coronation of Queen Victoria, Mr. De La Rue undertook to produce the Sun newspaper printed in gold. The rapidity with which this had to be effected, was one of the many difficulties he had to encounter. Messrs. Clowes & Sons afforded him every aid by placing at his disposal the printing machines of their extensive establishment. Upwards of one hundred persons were employed to rub the bronze on the printed sheets, which had to be brought from the printing-office in Stamford street as soon as printed, to Messrs. De La Rue's works in Burnhill row, to be there bronzed and finished. More than 100,000 copies were thus produced—10,000 in time for the publication of the Sun on Coronation day.

Gold printing is now applied to numerous purposes in most countries. The following is the best method of producing good and bright results by letter-press printing:—Take the best printers'-varnish, grind it to a thick consistency with the best sienna or brown umber, and reduce this with De La Rue's gold size until it be of the thickness of thin treacle; ink the form in the usual manner, and when printed, apply the bronze by rubbing it gently over the article with cotton wool. If leaf gold or leaf metal is required, it must be laid on carefully; and then the dry sheets should be wiped, to clear them of the superfluous bronze or metal. The gold printing is much improved by its being passed over polished steel plates between powerful rollers.

Improved Barometer.



In this improved barometer a column of carbonic oxide gas under compression is employed in combination with a columnn of mercury, in a manner hereafter described, so as to indicate atmospheric changes, of which the ordinary barometer is not susceptible.

The annexed engraving represents a front elevation of this improved barometer. It consists of a bent tube of glass, *a a*, having a bore of about one-sixteenth of an inch. This tube is furnished with bulbs, *c b*, at either end, both of which are left open during the filling of the tube, the bulb, *b*, having a permanent opening at the top of considerable size, while the other bulb, *c*, has a small orifice at the apex below. The end of the tube is continued at *e*, within the bulb, *b*, and terminates as near as possible in the centre of that vessel. This tube is contracted at the orifice, *e*, so that the mercury when poured into the bulb, to a height slightly above it, will not pass down the tube, *a*. Mercury is first introduced into the bulb, *b*, around the projecting pipe, *c*, until it is sufficient to cover the orifice of *e*, with a slight film, without being of sufficient weight to force its way down the pipe. Carbonic oxide gas next is introduced at the orifice in the lower end or point of the bulb, *c* into which it is forced until all the air in the tube, *a*, is expelled at the pipe, *e*, where it escapes through the film of mercury covering the pipe. The pipe, *a*, having thus been completely filled with carbonic oxide gas, the orifice in *b* is hermetically sealed. Mercury is now poured into the bulb, *b*, until the column passes down the long stem of *a*, and is of sufficient pressure to rise in the short stem to the point, *d*, when the whole of the gas will be compressed into the upper portion or the short stem and its bulb, *c*. The opening in the bulb, *b*, at *f*, is now closed by the introduction of a piece of cane, wrapped round with a piece of leather, the pores in the cane permitting the free ingress and egress of the atmosphere.

This barometer is now placed under the receiver of an air-pump, along with a standard barometer, the air-pump being so constructed, that the air in the receiver can either be exhausted or condensed, so as to subject the barometers to a partial vacuum, or to increased atmospheric pressure, when the various graduations are read off on the scale, *i*, according to the position of the surface of the mercury in the short stem of the tube, *a*, and marked according to the indications of the standard barometer placed under the same circumstances. Having thus determined the scale for the new barometer, the graduations on which will be found at shorter distances than the ordinary barometer, on account of the pressure of the gas in the tube, this barometer is next rendered a thermometric indicator within certain limits. For this purpose, it is placed with a standard thermometer, *g*, under such circumstances as are usually adopted for determining the scale of those instruments, as placing them in temperatures the extremes of what they are desired to indicate, or some well known temperatures readily determined. In this instance, the scale extends to about 80° Fah. Placing this barometer and the standard thermometer in temperatures, the extremes of the scale, or at intermediate temperatures, the reading indicated on the thermometer, *g*, is marked on the scale, *k*, according to the position of the mercury in the short stem of *a*, and the intermediate numbers divided off as usual. In reading off the scale, *k*, the scale, *i*, is employed, which has a pointer, *h*; this scale is not stationary, but slides up and down, and during the indications of the thermometer, *g*, the scale, *i*, is moved, to agree with the surface of the mercury, and so as to correspond, at each variation, with the indication of the standard barometer—that is to say, if the standard barometer indicates 29 inches of mercury, that division on the scale, *i*, is placed opposite the surface of the mercury, when the pointer, *h*, will indicate the position of the graduation of the scale, according to the temperature under which they are placed, and indicated by the standard thermometer.

The thermometer, *g*, is permanently attached to the barometer; and when it is desired to ascertain the true state of the atmosphere, and what change has taken place, the pointer, *h*, is moved, and with it the scale, *i*, to the temperature marked by the thermometer, *g*, when the position of the mercury in the pipe, *a*, will indicate the result desired on scale, *i*.

Hydrophobia.

The July number of the "Homœpathic Medical News Letter," published at St. Louis, contains an account of a case of hydrophobia in a boy of 11 years of age, in that city, who was treated successfully by the Editor, Dr. Comstock, with Belladonna, Hyosciamus, and Lachesis, as occasion required. The lad had a most severe attack,—vesicles were formed under the tongue, which Dr. Comstock punctured and touched with the chloride of zinc. Hyosciamus and Belladonna, in tincture, ten drops of each in separate tumblers two-thirds full of water, and two teaspoonsfull, given every hour out of the tumblers alternately.

Hydrophobia he considers a disease of the brain; in this case the symptoms came on eight days after the child was bitten. He mentions a case reported by his uncle, Dr. Joseph Comstock, of Lebanon, Conn., where the symptoms did not appear for eighteen years after the bite was inflicted. He asserts that the dread of water does not always accompany this disease, and mentions a case recorded in the London Lancet for April, 1826, and several cases of a like character are recorded in a treatise on the subject by Dr. Meniere.

Shooting Stars.

A correspondent of the New Haven Palladium says that sufficient observations have been made to show that the meteoric shower of August 9th, 11th, has not this year failed. During a period of forty minutes, on the morning of the 10th, he saw nineteen meteors, although not more than one-fifth of the heavens was visible. With one or two exceptions these meteors moved in paths which traced back, would meet near the constellation Perseus.

LITERARY NOTICES.

MACHINERY OF THE NINETEENTH CENTURY—Part 6 of this great work, by G. D. Dempsey, C. E., in London, has just been received, and is for sale by H. Bailliere, 290 Broadway, N. Y. It contains splendid drawings of Atherton's Sway Beam Engine, Usher's Steam Plow, and Remond's Patent Envelope Machine. This is a great work, every machinist should possess a copy of it.

MEYER'S UNIVERSUM, No. 4, Edited by Chas. A. Dana, just published. It contains the following elegant steel engravings: "The Cathedral of Strasburg;" "Tell's Chapel," near Kussnacht, in Switerland; "The Palace of the Legion of Honor, in Paris;" "The Ruins of Etawah," in Bengal, India, with descriptive text; price 25 cents, or $3 per volume Subscribers, in advance, receive a splendid engraving as a premium. Published semi-monthly, by Herrmann J. Meyer, 164 William street, New York.

PRACTICAL TREATISE ON BUSINESS—This is a very interesting and instructive book, by Edwin T. Fredley; it is especially adapted to men of business, but with one of the conclusions we cannot agree: on page 152 it is stated that a profound speculator is a rarer character than a great general, or a good poet; this is leather and prunella, but not so the whole tenor of the work, which we consider is able and useful, and exhibits profound thinking and great powers of observation. It is for sale by Lewis Colby, New York.

PRACTICAL MINERALOGY.—A new edition of this work has just been issued by Lindsay & Blakiston, of Philadelphia. Its author, F. Overman, understood the subject well, and he presents useful information on assaying and mining, with instructions for prosecuting the same. It is an excellent book, and deserves an extensive circulation.

TRANSACTIONS OF THE NATIONAL ECLECTICAL MEDICAL ASSOCIATION.—We have received a copy of this work. This Association is getting large and influential. The Eclectic system embraces some excellent features; but we must say that there is too much ill feeling manifested by one class of doctors against another, and the Eclectics are as bitter (if not more so) as the Allopathists. The work is for sale by C. Scribner & Wood, of this city.

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